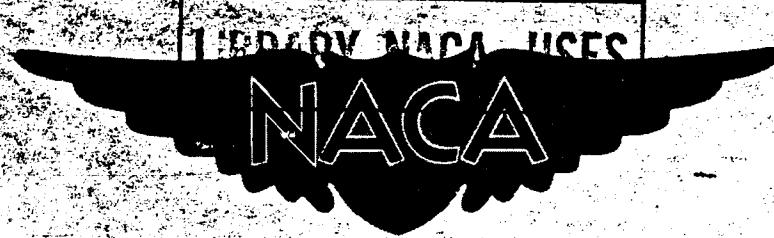


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WING LOADS AND LOAD DISTRIBUTIONS THROUGHOUT THE LIFT

RANGE OF THE DOUGLAS X-3 RESEARCH AIRPLANE

AT TRANSONIC SPEEDS

By Earl R. Keener and Gareth H. Jordan

High-Speed Flight Station
Edwards, Calif.

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NATIONAL ADVISORY COMMITTEE
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November 9, 1956

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WING LOADS AND LOAD DISTRIBUTIONS THROUGHOUT THE LIFT
RANGE OF THE DOUGLAS X-3 RESEARCH AIRPLANE
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SUMMARY

Wing loads and load distributions were obtained by differential-pressure measurements between the upper and lower surfaces of the left wing of the Douglas X-3 research airplane to determine the effects of angle of attack and Mach number on the wing characteristics at transonic Mach numbers. The wing has an aspect ratio of 3.09 and a modified 4.5-percent-thick hexagonal section. Data cover the range from near-zero lift to maximum lift and from a Mach number of 0.71 to a Mach number of 1.15.

The chordwise load distributions and the wing-section aerodynamic characteristics were similar at each wing station. A large load developed at the leading edge resulting from the relatively sharp leading edge. At Mach numbers below 0.9 separation of the flow from the leading edge resulted in a loss in leading-edge load and a low maximum lift. The maximum normal-force coefficient of the wing panel was 0.66 at a Mach number of 0.71 compared to 1.2 at supersonic Mach numbers. Spanwise load distributions were essentially elliptical throughout the lift and Mach number range tested. Values of normal-force-curve slope ranged from 0.076 per degree at a Mach number of 0.71 to 0.116 per degree at a Mach number of 1.0. Variation of pitching moment with lift was unstable at the lower Mach numbers, becoming increasingly stable above a Mach number of about 0.9. The chordwise location of the center of pressure varied with angle of attack between 15- and 30-percent chord at subsonic Mach numbers and between 31- and 37-percent chord at supersonic Mach numbers. The spanwise location of the center of pressure was relatively constant with lift and Mach number at about 42 percent of the panel span. The flight results are in good agreement with wind-tunnel results at Mach numbers below 0.90 and in fair agreement at Mach numbers of 0.90 and 0.92.

Deflecting the leading-edge flap about 7° over a Mach number range of 0.71 to 0.80 increased the maximum normal-force coefficient about 0.06 and moved the center of pressure rearward at the lower angles of attack and slightly forward at the higher angles of attack. No change occurred in the spanwise location of the center of pressure.

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INTRODUCTION

Flight tests of the Douglas X-3 research airplane have been conducted at the NACA High-Speed Flight Station at Edwards, Calif., to explore the subsonic and low supersonic Mach number range with a thin-winged airplane designed for supersonic speeds. As a part of the flight test program wing loads and load distributions were obtained to contribute some general aerodynamic data on this supersonic design. The data were obtained by differential-pressure measurements between the upper and lower surfaces of the left wing.

This paper presents an analysis of the effects of angle of attack and Mach number on the wing loads and the chordwise and spanwise load distributions over a Mach number range of 0.71 to 1.15. The data cover the normal range of angle of attack and Mach number of the airplane. Also included are the preliminary results of the effect of deflecting the leading-edge flap about 7° at $M \approx 0.71, 0.76$, and 0.80 throughout the lift range.

Reference 1 presents some preliminary pressure distributions over the upper and lower surfaces at a midsemispan station of the wing through an angle-of-attack range at Mach numbers of about 0.61, 0.78, 0.94, and 1.10.

SYMBOLS

A	aspect ratio, b^2/S
$b/2$	wing semispan
$b'/2$	wing-panel span, spanwise distance from first row of orifices ($0.301b/2$) to wing tip, ft
C_N'	wing-panel normal-force coefficient, $\int_0^{l'} c_n \frac{c}{c_{av}} d \frac{2y'}{b'}$
C_{NA}	airplane normal-force coefficient, Wn/qS
$\frac{C_N'(S'/S)}{C_{NA}}$	ratio of normal force of wing to total airplane normal force

c_b' wing-panel bending-moment coefficient about $0 \frac{b'}{2}$,

$$\int_0^1 c_n \frac{c}{c'_{av}} \frac{2y'}{b'} d \frac{2y'}{b'}$$

c_m' wing-panel pitching-moment coefficient about $0.25\bar{c}$,

$$\frac{c'_{av}}{\bar{c}'} \int_0^1 c_m' \left(\frac{c}{c'_{av}} \right)^2 d \frac{2y'}{b'}$$

c_p differential pressure coefficient, $\frac{p_l - p_u}{q}$

c local wing chord parallel to plane of symmetry, ft

\bar{c}' mean aerodynamic chord of wing panel,

$$2/S' \int_0^{b'/2} c^2 dy', \text{ ft}$$

c'_{av} average chord of wing panel, ft

c_m section pitching-moment coefficient about $0.25c$,

$$\int_0^1 c_p \left(0.25 - \frac{x}{c} \right) d \frac{x}{c}$$

c_m' section pitching-moment coefficient about line perpendicular
to longitudinal axis of airplane, passing through $0.25\bar{c}'$,
 $c_m + 0.50(1 - \bar{c}'/c)c_n$

$c_m' \left(\frac{c}{c'_{av}} \right)^2$ section pitching-moment parameter

c_n section normal-force coefficient, $\int_0^1 c_p d \frac{x}{c}$

$c_n \left(\frac{c}{c'_{av}} \right)$ section normal-load parameter

g acceleration due to gravity, ft/sec^2

k ratio of experimental lift-curve slope to theoretical value
of $2\pi/\beta$, both taken at the same Mach number

M	free-stream Mach number
n	normal-load factor, g units
p_l	local static pressure on lower wing surface, lb/sq ft
p_u	local static pressure on upper wing surface, lb/sq ft
q	free-stream dynamic pressure, lb/sq ft
S	total wing area, including area projected through fuselage, sq ft
$S'/2$	area of wing panel (outboard of $0 b'/2$), sq ft
W	airplane weight, lb
x	chordwise distance rearward of leading edge of local chord, ft
x_{cp}	chordwise location of center of pressure of wing section, $(0.25 - c_m/c_n)100$, percent c
x'_{cp}	chordwise location of center of pressure of wing panel from leading edge of \bar{c}' , $(0.25 - C_m'/C_N')100$, percent \bar{c}'
y'	spanwise distance outboard of $Ob'/2$, ft
y'_{cp}	spanwise location of center of pressure of wing panel, $(C_b'/C_N')100$, percent $b'/2$
α	measured airplane angle of attack, deg
β	compressibility parameter, $\sqrt{1 - M^2}$
δ_{aL}	left aileron position, deg
δ_f	leading-edge flap position, deg

DESCRIPTION OF AIRPLANE AND WING PANEL

Photographs of the airplane are shown in figure 1, and a three-view drawing presenting the overall dimensions is shown in figure 2. The physical characteristics of the airplane and wing panel are given in table I.

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The wing has an aspect ratio of 3.09, a taper ratio of 0.39, and zero incidence, dihedral, and twist. A line through 75-percent local chords is perpendicular to the plane of symmetry. The wing section is a 4.5-percent-thick modified hexagonal airfoil with vertices at 30- and 70-percent chord. Modifications to the airfoil consisted of a 188-inch radius at 30- and 70-percent chord and a small radius at the leading and trailing edges as shown in table II.

A drawing of the wing is shown in figure 3. The wing panel consists of the portion of the left wing outboard of the first streamwise row of orifices (0.30lb/2). All the wing-panel coefficients are based on the geometric properties of the wing panel included in table I. The leading-edge flap has a constant streamwise chord of 12.5 inches and extends from the wing root to the wing tip. Geometric properties of the leading-edge flap are also included in table I. Two control-actuator fairings are located on the bottom surface of each wing as shown in figures 2 and 3.

INSTRUMENTATION AND ACCURACY

Standard NACA film-recording instruments were used to record the wing differential pressures, indicated free-stream static and dynamic pressures, normal acceleration, angle of attack, angle of sideslip, aileron position, leading-edge flap position, and rolling and pitching angular velocities and accelerations. All instruments were correlated by a common timer.

A pitot-static tube with an NACA type A-6 total-pressure head (ref. 2) was mounted on a nose boom and the static-pressure error was determined in flight. The total estimated error in Mach number is within ± 0.01 . Angle of attack and angle of sideslip were measured by vanes mounted on the nose boom. The angle of attack indicated by the recorder is presented in this paper and was measured with respect to the fuselage reference plane.

Flush-type static-pressure orifices installed in the left wing were arranged in five streamwise rows. The ordinates of the airfoil section at each row of orifices are given in table II. The chordwise locations of the orifices are given in table III. Figure 3 shows the spanwise locations of the five rows of orifices.

The orifices were connected by tubing through the wing to the manometers in the instrument compartment. Lag in the pressure-recording system was determined by the method for photographic instruments presented in reference 3 and was checked in flight by comparing abrupt and gradual maneuvers. The lag was found to be negligible for the data presented in this paper; therefore, no lag corrections were applied to the data.

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Accuracies of other pertinent recorded quantities are:

Differential-pressure measurements, $p_l - p_u$, lb/sq ft	± 7
Normal load factor	± 0.05
δ_{a_L} , deg	± 0.2

These accuracies resulted in the following estimated probable accuracy in some of the coefficients for the Mach number range of 0.70 to 1.15:

C_p	± 0.02
c_n	± 0.03
c_m	± 0.01
C_{NA}	± 0.02
C_N'	± 0.04
C_m'	± 0.02

TESTS

The data presented were obtained from pull-ups and wind-up turns at Mach numbers from 0.71 to 1.15 at an altitude of about 30,000 feet. Reynolds number based on the mean aerodynamic chord of the wing varied between 16×10^6 and 26×10^6 .

DATA REDUCTION AND PRESENTATION

Automatic data reduction equipment, utilizing a card punch and a card program calculator, was used to obtain pressure coefficients from the data recorded on film. The calculator also performed the chordwise and spanwise integrations to obtain the normal-force and pitching-moment coefficients. The numerical integration was accomplished by means of parabolic arc approximations to the pressure functions. Comparison of numerical integrations with mechanical integrations of hand-faired pressure distributions gave excellent agreement.

The pressure coefficients and aerodynamic characteristics obtained from the wing differential pressure measurements are presented in tables IV to XIV for the approximate Mach numbers of 0.71, 0.77, 0.83, 0.88, 0.90, 0.92, 0.96, 0.99, 1.01, 1.10, and 1.15. The maneuvers at Mach numbers of 1.10 and 1.15 experienced a decrease in Mach number of about 0.06 from the given Mach number as the angle of attack increased. The data for the

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other Mach numbers are within ± 0.01 of the approximate given Mach number, except for $M \approx 0.71$ and 0.83 which are within ± 0.02 of the given Mach number. Data for a flap deflection of about 7° at Mach numbers of about 0.71 , 0.76 , and 0.80 are tabulated in tables XV to XVII.

RESULTS AND DISCUSSION

Chordwise Load Distribution

Representative chordwise load distributions selected from the tabulated data are presented as oblique projections in figures 4 to 9. Information concerning the upper and lower surface pressure distributions which result in these load distributions may be obtained from references 1 and 4.

Effect of angle of attack. - In general, the chordwise load distributions are similar at each wing station. As the angle of attack increased, an appreciable load quickly developed over the forward 20-percent chord resulting from the relatively sharp leading edge. At the lower Mach numbers tested the load at the leading edge reached a maximum at an angle of attack below maximum lift, at which point the leading-edge load suddenly decreased. At the higher Mach numbers tested the load at the leading edge increased until maximum lift was reached. According to references 5 and 6, the loss in leading-edge load at the lower Mach numbers resulted from separation of the flow over the upper surface of the leading edge. These references show that the leading-edge separation is a characteristic which occurs at Mach numbers less than 0.9 for airfoils with small leading-edge radii. Reference 7, which presents tuft pictures for an 0.16-scale model of the X-3 airplane in the Ames 16-foot high-speed wind tunnel, reports that at Mach numbers less than 0.8 the flow separated from the leading edge and progressed rearward to the trailing edge. At Mach numbers greater than 0.9 separation on the model began at the trailing edge and progressed forward.

At the intermediate Mach numbers of 0.83 , 0.88 , and 0.92 the influence of shock waves may be seen in the chordwise load distributions. The shock waves caused an abrupt decrease in load and a down-load near the trailing edge. At the supersonic Mach numbers the increase in load with increasing angle of attack was uniform at each chord station, unlike the subsonic Mach numbers.

Effect of Mach number. - Figure 10 shows the effect of Mach number on the load distribution over the midsemispan orifice station at $\alpha \approx 6^\circ$. Since the chordwise load distributions are similar at all the stations, figure 10 shows the changes with Mach number that are common to all the stations at low and moderate angles of attack. At $M \approx 0.71$ the chordwise loading was triangular, with most of the load occurring over the

forward 50-percent chord. As the Mach number increased to 1.15, shock waves formed over the center of the wing section and moved rearward to the trailing edge, resulting in a rearward movement of the load.

Leading-edge separation boundary.- The approximate boundary for the leading-edge flow separation discussed previously was determined for the X-3 wing by plotting the differential pressure coefficient for the orifice closest to the leading edge against angle of attack and by noting the angle of attack at which C_p ceased to increase. Figure 11 shows representative plots at $M \approx 0.71$, 0.88, and 0.96. At $M \approx 0.96$ and greater, there was no clear indication of leading-edge separation below maximum lift. In figure 12 the results obtained from the differential pressure plots are shown for the root, midsemispan, and tip orifice stations. At $M \approx 0.71$ the flow separated first at the midsemispan at $\alpha \approx 4.5^\circ$ and spread to the tip and the root as the angle of attack increased to 80° . At $M \approx 0.88$ the flow separated first at the tip at $\alpha \approx 9^\circ$ and spread to the root at $\alpha \approx 12.5^\circ$. At $M \approx 0.92$ the flow separated along the entire leading edge at $\alpha \approx 13^\circ$. No leading-edge separation was evident below maximum lift at Mach numbers greater than 0.92.

Wing-Section Aerodynamic Characteristics

The variation with lift of the wing-section aerodynamic characteristics is presented in figure 13. Mach number effects are shown in figure 14 and the effect of spanwise location is shown in figure 15.

Section normal-force coefficient.- Figure 13 shows that the variation of c_n with α at each orifice station was essentially linear to near maximum lift for $M \approx 0.71$ and 0.77 and for Mach numbers of 0.92 and greater. At the intermediate Mach numbers of 0.83, 0.88, and 0.90, however, the c_n curves experienced an increase in slope below $c_n \approx 0.5$ and were erratic above this value. The chordwise load distributions indicate that the change in slope and erratic behavior of the normal-force curves resulted from abrupt movements of shock waves over the center portion of the modified hexagonal wing section and from flow separation (near maximum lift) from the leading edge.

At $M \approx 0.71$ maximum c_n varied from about 0.75 at the inboard stations to 0.58 at the tip. At Mach numbers greater than 1.0, maximum c_n was about 0.5 greater than at $M \approx 0.71$. The low maximum lift at the lower Mach numbers resulted from separation of the flow at the leading edge, which was discussed previously. This type stall has been called "thin airfoil stall" in reference 8. Included in this reference are the low-speed characteristics of a modified 4.23-percent-thick double-wedge airfoil which stalled at a lift coefficient of about 0.85, much lower than the thicker airfoils tested.

Figure 14(a) shows the variation with Mach number of the section normal-force coefficient for the midsemispan orifice station at several angles of attack. The figure shows that c_n increased rapidly between $M = 0.80$ and 0.95 , the largest increase occurring at the higher angles of attack. At $\alpha = 12^\circ$ the increase in c_n with Mach number was especially large, since the wing was stalled at Mach numbers less than about 0.9.

Figure 14(b) shows the variation with Mach number of c_n curve slopes for the midsemispan orifice station at $\alpha = 3^\circ$ and 6° . At $\alpha = 3^\circ$ the slope increased with Mach number from a subsonic value of about 0.08 to a sonic value of about 0.13, then decreased to about 0.11 at $M = 1.15$. At $\alpha = 6^\circ$ the slopes were about the same except for the Mach number region of 0.80 to 0.95 where the slopes increased, resulting in an additional peak in the curve at $M \approx 0.88$.

Figure 15 shows that the normal-force characteristics of each wing section are similar. The section normal-force coefficient was slightly higher at the midsemispan orifice station than at the root or the tip stations, and the c_n curve slopes were about the same except for a slight decrease at the root orifice station.

Section pitching-moment coefficient. - In general, over the Mach number range from 0.71 to 0.92 the section pitching-moment coefficient about the quarter chord had an unstable variation with c_n over the lower c_n range (fig. 13). At moderate normal-force coefficients the variation gradually became stable. The change in slope apparently was caused by the rearward movement of separated flow from the leading edge, which has been discussed previously. The c_m curves at each wing section at these Mach numbers are similar to the low-speed pitching-moment characteristics of the 4.23-percent-thick modified double-wedge airfoil in reference 8. At $M \approx 0.88$, 0.90 , and 0.92 the pitching-moment curves are erratic, similar to the c_n curves in this region. As the Mach number increased to 1.15 the variation of c_m with c_n became stable, except for the low-lift range at the tip where the variation was unstable at all Mach numbers tested. The stable (and almost linear) variations at these Mach numbers resulted from the uniform increase in normal load at each wing section compared to the nonuniform changes at the lower Mach numbers.

It was reported in reference 1 from preliminary data that during the maneuver at $M \approx 0.94$ an unstable break occurred in the c_m curve at $c_n \approx 0.60$ and that the curve became stable again at $c_n \approx 0.70$. Examination of the more complete data in figure 13(c) reveals that the unstable break reported in reference 1 was a Mach number effect rather than a lift effect. During the unstable break the Mach number decreased from 0.94 to

0.92 and as shown in figure 13(c), the level of c_m changes considerably between Mach numbers from 0.92 to 0.96.

Section center of pressure.- In general, the section center of pressure moved rearward with increasing normal-force coefficient (fig. 13). The rearward movement was small for the inboard stations (below wing stall), but amounted to about 40-percent chord at the tip.

Figure 14(c) includes the effect of Mach number on the section center of pressure for the midsemispan orifice station at $\alpha = 3^\circ$, 6° , 9° , and 12° . In general, between $M = 0.85$ and 0.95 the section center of pressure moved rearward, the rearward movement decreasing as the angle of attack increased. The load distributions in figure 10 show that the rearward movement of the section center of pressure occurred as a result of the increase in load over the rear part of the wing section as the shock waves moved rearward to the trailing edge. Figure 15 shows that the center-of-pressure movement was similar at each wing section, but that the center of pressure was located about 10 percent farther to the rear at the root than at the tip.

Spanwise Distributions

Spanwise load distributions.- Spanwise normal-load distributions are presented in figure 16 for representative Mach numbers and angles of attack. The shape of the distributions does not change appreciably over the Mach number and lift range tested, except at $\alpha \approx 3^\circ$ where the load at the wing tip is consistently low at all Mach numbers presented. The probable cause of this condition is the control-actuator fairing on the lower surface near the last orifice station. Wing stall had little effect on the shape of the distributions. The apparent change in shape in figure 16(b) at $\alpha = 10.1^\circ$ was caused by excessive aileron deflection.

Comparison of the load distributions at $M \approx 0.71$ with the theoretical methods of references 9 and 10 is made in figure 17. The charts in reference 9 were used to obtain the load distribution for the wing alone, and the method of reference 10 was used to calculate the wing load in the presence of the fuselage. In using reference 9 a section lift-curve slope of 2π per radian was used, resulting in an aspect ratio parameter $\beta A/k$ of 2.18. The assumed value of section lift-curve slope is reasonable according to the data for the modified 4.23-percent-thick double-wedge airfoil in reference 8. This airfoil had a lift-curve slope of about 0.118 per degree at low speed. Figure 17 is presented to compare the shape of the distribution with that obtained by theory, therefore the unit normal-load parameter was plotted for the portion of the distribution over the wing panel. Included in figure 17 is the portion of an elliptical distribution for the wing panel.

At moderate angles of attack (6.2° and 9.6°) the experimental distributions are nearly elliptical and the method of reference 9, which neglects the fuselage effects, is adequate in predicting the shape of the distribution. However, by using the method of reference 10, which accounts for fuselage effects at these angles, the load increases over the inboard semispan. Use of this method would cause the bending moment at the root of the wing to be slightly underestimated. At low lift ($\alpha = 3.2^\circ$) the experimental distribution does not agree with either of the theoretical methods.

Spanwise pitching-moment distribution.- The spanwise distributions of pitching moment about $0.25\bar{c}'$ for representative Mach numbers and angles of attack are shown in figure 18. At the lower Mach numbers tested, the pitching moment became more positive at the inboard stations and more negative at the outboard stations as angle of attack increased. After leading-edge flow separation occurred, the pitching moment at the inboard stations quickly decreased. As the Mach number increased to 0.99, the change in pitching moment at the fuselage decreased to near zero. At supersonic Mach numbers the pitching moment increased negatively at all stations as the angle of attack increased.

Wing-Panel Aerodynamic Characteristics

The variation with lift of the wing-panel aerodynamic characteristics is presented in figure 19. The data presented at high angles of attack were in some cases insufficient to obtain a fairing of C_N' with α , however the variation of C_{NA} with angle of attack was used as a guide. Mach number effects are shown in figures 20 and 21.

Wing-panel normal-force coefficient.- The maximum normal-force coefficient of the wing panel was 0.66 at $M \approx 0.71$ and about 1.2 at supersonic Mach numbers (fig. 19(a)). Early separation of the flow from the leading edge was a contributing factor to the low maximum lift at Mach numbers less than 0.9, as discussed previously. The variation of C_N' with α in figure 19(a) was linear except in the transonic region of $M = 0.83$ to $M = 0.92$ where, because of the erratic wing-section behavior, the wing-panel variation was also erratic. At all Mach numbers tested, zero normal-force coefficient appears to occur at a positive angle of attack of from 1° to 2° . This is caused, in part at least, by the effects of the control-actuator fairings on the lower surface, which would tend to produce a down load at zero angle of attack.

The variation of C_N' with Mach number is shown in figure 20(a) at several angles of attack. The characteristics are similar to the wing section data. Comparison of C_N' with C_{NA} in figure 20(a) shows that

the airplane normal-force coefficient experienced the same variation with Mach number as was experienced by the wing-panel normal-force coefficient.

The variation $dC_N'/d\alpha$ with M (fig. 20(b)) was similar to that shown for the wing section. At $\alpha = 3^\circ$ the slope was about 0.076 per degree from $M = 0.71$ to $M = 0.83$. Between $M = 0.83$ and 1.00 the slope increased to 0.116 per degree, then decreased to 0.100 per degree at $M = 1.15$. The experimental slope of 0.076 per degree at $M = 0.71$ is higher than the theoretical values of 0.064 per degree from reference 9 and 0.061 per degree from reference 10. The variation of the normal-force-curve slope of the airplane was similar to that of the wing panel.

The contribution of the wing to the total normal force is shown in figure 21. As the angle of attack increased, the contribution of the wing decreased. At $\alpha = 6^\circ$ the wing contributed about 70 percent of the total normal force throughout the Mach number range presented.

Wing-panel pitching-moment coefficient.- Similar to most unswept wings, the X-3 wing had an unstable variation of C_m' with C_N' at low transonic Mach numbers (fig. 19(b)), except at high lift where flow separation changed the variation from unstable to stable. In the discussion of the wing-section characteristics, the separation was shown to start on the upper surface at the leading edge and to move rearward to the trailing edge. At $M = 0.83$ to 0.92 the C_m' curves were erratic because of the erratic wing-section behavior. As the Mach number increased, the wing became stable as a result of the rearward movement of the shock waves to the trailing edge.

Wing-panel bending-moment coefficient.- The variation of C_b' with C_N' was essentially linear at all Mach numbers (fig. 19(c)). At $M = 0.83$ to 0.92 there was little effect of the erratic wing-section behavior on the bending moment, which shows that the flow changes occurring at these Mach numbers were primarily chordwise, not spanwise changes. The slopes of the C_b' curves are constant with Mach number.

Wing-panel center of pressure.- At $M = 0.71$ to 0.83 the chordwise location of the center of pressure (fig. 19(d)) was constant at low lift, but moved rearward after the flow about the leading edge separated. At $M > 0.83$ the center of pressure moved rearward with increasing lift. The variation of the chordwise location with Mach number is shown in figure 20(c). The center-of-pressure movement of the wing panel was similar to that of the wing section in that it moved rearward between $M = 0.85$ and 0.95, the rearward movement decreasing as the angle of attack increased.

The spanwise location of the center of pressure (fig. 19(e)) was relatively constant with lift and Mach number at about 42 percent $b'/2$ at all Mach numbers tested.

Comparison With Wind-Tunnel Data

A comparison of flight data with wind-tunnel results at Mach numbers from 0.71 to 0.92 is shown in figures 22 to 24. The wind-tunnel data of reference 4 covered a Mach number range from 0.60 to 0.92, therefore the comparison is limited to subsonic and transonic speeds. Included in the comparisons are preliminary flight data from reference 1. Differences between the present data and preliminary flight data are evident, however the present data are considered more reliable. The difference in normal-force coefficient can be explained as resulting from a sparcity of measured points along the chord in the preliminary data particularly in the vicinity of the wing shock, a more refined airspeed calibration, and some discrepancy in the preliminary angle-of-attack measurements.

In general, the wind-tunnel and flight results are in good agreement below a Mach number of 0.90 and in fair agreement at Mach numbers of 0.90 and 0.92. At Mach numbers of 0.90 and 0.92 the normal-force coefficient for the wind-tunnel data is lower than that for the flight data over most of the lift range. The chordwise load distributions of figure 22(b) at $M = 0.92$ show good agreement in shape and location of the wing shock, however the differences in level may be associated with differences in angle of attack between the wind-tunnel and flight measurements. As a result of these differences, the spanwise load distributions in figure 24(b) at $M = 0.92$ do not agree in level, however the shape of the distributions would seem to be comparable.

Effect of Leading-Edge Flap Deflection

Preliminary data presented in figure 25 show the effect on the wing-panel aerodynamic characteristics of deflecting the leading-edge flap an average of 7° at $M = 0.71$, 0.76 , and 0.80 . At $M = 0.71$ and 0.76 the deflected flap increased the maximum normal-force coefficient about 0.06 but did not appreciably change the portion of the C_N' curve below $C_N' = 0.6$. The deflected flap decreased the pitching-moment coefficient slightly and delayed the break from an unstable to a stable variation to a higher angle of attack, undoubtedly the result of a delay in leading-edge separation. Bending moment was unaffected. No change in spanwise center-of-pressure location occurred, however the chordwise location was more to the rear at lower angles of attack and slightly farther forward at higher angles of attack.

CONCLUDING REMARKS

Wing loads and load distributions were obtained by pressure measurements over the left wing of the Douglas X-3 research airplane. The data cover the range from near zero lift to maximum lift and from a Mach number of 0.71 to 1.15.

The chordwise load distributions and the wing-section aerodynamic characteristics were similar at each wing station. A large load developed at the leading edge resulting from the relatively sharp leading edge. At Mach numbers below 0.9 separation of the flow from the leading edge resulted in a loss in leading-edge load and a low maximum lift. The maximum normal-force coefficient of the wing panel was 0.66 at a Mach number of 0.71 compared to 1.2 at supersonic Mach numbers. Spanwise load distributions were essentially elliptical throughout the lift and Mach number range tested. Values of normal-force-curve slope ranged from 0.076 per degree at a Mach number of 0.71 to 0.116 per degree at a Mach number of 1.0. Variation of pitching moment with lift was unstable at the lower Mach numbers, becoming increasingly stable above a Mach number of about 0.9. The chordwise location of the center of pressure varied with angle of attack between 15- and 30-percent chord at subsonic Mach numbers and between 31- and 37-percent chord at supersonic Mach numbers. The spanwise location of the center of pressure was relatively constant with lift and Mach number at about 42 percent of the panel span. The flight results are in good agreement with wind-tunnel results at Mach numbers below 0.90 and in fair agreement at Mach numbers of 0.90 and 0.92.

Deflecting the leading-edge flap about 7° over a Mach number range of 0.71 to 0.80, increased the maximum normal-force coefficient about 0.06 and moved the center of pressure rearward at the lower angles of attack and slightly forward at the higher angles of attack. No change occurred in the spanwise location of the center of pressure.

High-Speed Flight Station,
National Advisory Committee for Aeronautics,
Edwards, Calif., June 26, 1956.

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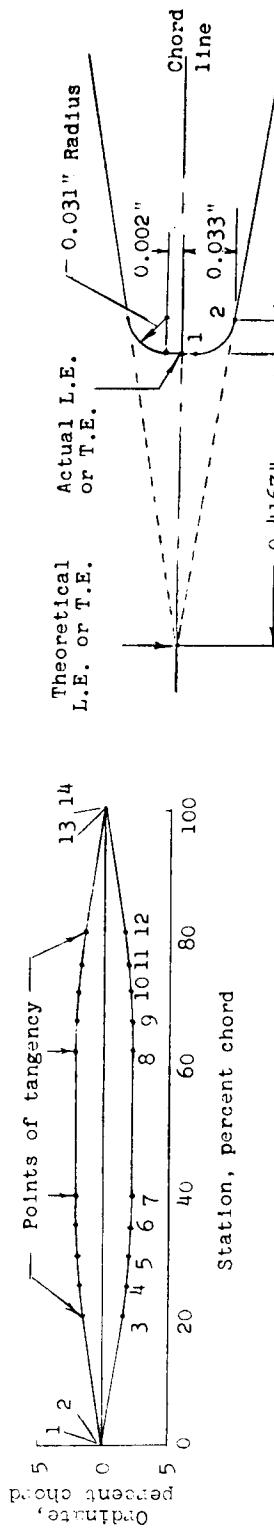
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TABLE I.- PHYSICAL CHARACTERISTICS OF THE DOUGLAS X-3 AIRPLANE

Wing:	
Airfoil section	Modified hexagon
Airfoil thickness ratio, percent chord	4.5
Total area, sq ft	166.50
Span, ft	22.69
Mean aerodynamic chord (wing station 4.81 ft), ft	7.84
Root chord, ft	10.58
Tip chord (extended), ft	4.11
Taper ratio	0.39
Aspect ratio	3.09
Sweep at 0.75 chord line, deg	0
Sweep at leading edge, deg	23.16
Sweep at trailing edge, deg	-8.12
Incidence, deg	0
Dihedral, deg	0
Geometric twist, deg	0
Leading-edge flap:	
Type	Plain
Area (each), sq ft	8.38
Span at hinge line (each), ft	8.916
Chord, normal to hinge line, in.	11.49
Travel, leading edge down, deg	30
Wing panel (outboard of wing station 3.415 ft):	
Area (one panel), sq ft	50.42
Span (one panel), ft	7.93
Mean aerodynamic chord (wing station 6.85 ft), ft	6.68
Average chord, ft	6.37
Horizontal tail:	
Airfoil section	Modified hexagon
Airfoil thickness ratio at root chord, percent chord	8.01
Airfoil thickness ratio outboard of station 26, percent chord	4.50
Total area, sq ft	43.24
Span, ft	13.77
Mean aerodynamic chord, ft	3.34
Root chord, ft	4.475
Tip chord, ft	1.814
Taper ratio	0.405
Aspect ratio	4.38
Sweep at leading edge, deg	21.14
Sweep at trailing edge, deg	0
Dihedral, deg	0
Travel:	
Leading edge up, deg	6
Leading edge down, deg	17
Hinge-line location, percent root chord	46.46
Vertical tail:	
Airfoil section	Modified hexagon
Airfoil thickness ratio, percent chord	4.5
Area, sq ft	23.73
Span, (from horizontal-tail-hinge line), ft	5.59
Mean aerodynamic chord, ft	4.69
Root chord, ft	6.508
Tip chord, ft	1.93
Taper ratio	0.292
Aspect ratio	1.315
Sweep at leading edge, deg	45
Sweep at trailing edge, deg	9.39
Rudder:	
Area, rearward of hinge line, sq ft	5.441
Span at hinge line, ft	3.535
Root chord, ft	1.98
Tip chord, ft	1.097
Travel, deg	±20
Fuselage:	
Length including boom, ft	66.75
Maximum width, ft	6.08
Maximum height, ft	4.81
Base area, sq ft	7.94
Powerplant:	
Engines	Two Westinghouse J34-WE-17 with afterburner
Rating, each engine:	
Static sea-level maximum thrust, lb	4,850
Static sea-level military thrust, lb	3,370
Airplane weight, lb:	
Basic (without fuel, oil, water, pilot)	16,120
Total (full fuel, oil, water, no pilot)	21,900
Center-of-gravity location, percent mean aerodynamic chord:	
Basic weight - gear down	2.63
Total weight - gear down	4.59
Total weight - gear up	3.91

TABLE II
PROFILE AND ORDINATES OF THE WING SECTIONS AT THE ORIFICE STATIONS
[Modified 4.5-percent-thick hexagonal airfoil]



DIMENSIONS OF L.E. AND T.E.
(Same at all stations)

Stations and ordinates in percent of local chord

Station number	Row 1		Row 2		Row 3		Row 4		Row 5	
	Station	Ordinate								
1	0	±0.002	0	±0.002	0	±0.003	0	±0.003	0	±0.004
2	0.028	±0.032	0.022	±0.036	0.037	±0.042	0.043	±0.049	0.052	±0.059
3	22.382	±1.709	21.338	±1.634	19.948	±1.536	18.238	±1.414	15.998	±1.255
4	25.990	±1.946	25.138	±1.904	24.709	±1.848	23.812	±1.781	22.643	±1.691
5	29.604	±2.115	29.549	±2.096	29.477	±2.072	29.466	±2.041	29.300	±2.002
6	32.219	±2.216	33.663	±2.212	34.248	±2.206	34.969	±2.198	35.960	±2.189
7	36.836	±2.250	37.779	±2.250	39.023	±2.250	40.554	±2.250	42.625	±2.251
8	63.602	±2.250	62.721	±2.250	61.558	±2.250	60.120	±2.250	58.264	±2.251
9	67.000	±2.218	66.587	±2.214	66.043	±2.208	65.365	±2.201	64.524	±2.192
10	70.397	±2.123	70.451	±2.105	70.526	±2.082	70.610	±2.053	70.782	±2.016
11	73.791	±1.964	74.34	±1.925	75.005	±1.872	75.850	±1.809	77.055	±1.725
12	77.183	±1.741	78.172	±1.671	79.480	±1.579	81.116	±1.465	83.282	±1.344
13	92.972	±0.52	99.968	±0.36	99.962	±0.42	99.953	±0.49	99.998	±0.59
14	100.000	±0.002	100.000	±0.002	100.000	±0.003	100.000	±0.003	100.000	±0.004

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TABLE III
CHORDWISE LOCATIONS OF THE STATIC PRESSURE ORIFICES
[Percent local chord]

Row Orifice	1			2			3			4			5		
	Upper	Lower	Average												
1	2.1	2.1	2.1	2.6	2.2	2.4	2.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2	5.0	5.0	5.0	4.9	4.7	4.8	4.8	4.9	4.9	5.0	5.0	5.0	5.0	5.0	5.0
3	7.6	7.6	7.6	7.5	7.5	7.6	7.3	7.4	7.4	7.5	7.5	7.5	7.4	7.5	7.5
4	9.3	9.0	9.2	10.0	9.0	10.2	10.1	10.1	10.1	10.2	10.1	10.2	10.3	10.2	10.2
5	15.3	15.1	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
6	20.0	20.0	20.0	21.3	21.3	21.3	20.2	20.3	20.3	20.5	20.5	20.5	20.5	20.5	20.5
7	25.0	24.9	25.0	24.9	24.9	24.9	24.8	24.9	24.9	24.4	24.4	24.4	24.4	24.4	24.4
8	29.5	29.6	29.6	33.1	32.8	33.0	32.8	33.0	33.0	29.6	29.6	29.6	29.6	29.6	29.6
9	37.4	37.4	37.4	38.1	37.8	38.0	37.8	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9
10	47.6	47.5	47.6	47.6	47.5	47.6	47.3	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4
11	55.5	55.4	55.4	55.4	55.4	55.5	54.8	54.8	54.8	55.0	55.0	55.0	54.9	54.9	54.9
12	62.0	62.0	62.0	62.0	62.0	62.0	61.8	61.8	61.8	64.6	64.6	64.6	61.9	61.9	61.9
13	69.0	69.0	69.0	68.9	68.9	68.9	68.7	68.8	68.7	68.7	68.7	68.7	68.5	68.5	68.5
14	74.2	74.1	74.2	74.2	74.2	74.2	74.0	74.1	74.1	74.0	74.1	74.1	75.5	75.5	75.5
15	80.0	80.0	80.0	80.0	80.0	80.0	79.9	79.9	80.0	80.0	80.0	80.0	79.9	79.9	79.9
16	85.4	85.0	85.0	85.0	85.0	85.0	84.8	84.8	84.8	84.9	84.9	84.9	84.9	84.9	84.9
17	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
18	92.5	92.5	92.5	98.2	98.2	98.2	92.5	92.5	92.5	92.5	92.5	92.5	97.7	97.7	97.7
19	98.3	98.2	98.2	98.2	98.2	98.2	97.9	97.9	97.9	97.9	97.9	97.9	97.4	97.4	97.4

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TABLE IV
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

(a) $M = 0.70$
 $c_{NA} = 0.06$
 $\alpha = 3.2^\circ$
 $\delta_{aL} = 0^\circ$

(b) $M = 0.71$
 $c_{NA} = 0.11$
 $\alpha = 3.7^\circ$
 $\delta_{aL} = 0^\circ$

Orifice	Row				
	1	2	3	4	5
1	0.555	0.975	1.200	1.115	0.701
2	•470	•434	•691	•937	•581
3	•305	•340	•366	•634	•141
4	•307	•307	•235	•359	•052
5	•198	•188	•127	•195	•054
6	•187	•215	•184	•140	•079
7	•186	•094	•165	•117	•036
8	•105	•203	•231	•227	•018
9	•140	•126	•154	•090	•053
10	•078	•108	•106	•081	•081
11	•074	•059	•090	•055	•045
12	•069	•090	•018	•009	•054
13	•032	•045	•018	•027	•009
14	•098	•063	•058	•035	•054
15	•018	•000	—	•027	•037
16	•027	•017	•018	—	•045
17	—	•009	•045	•027	—
18	—	•017	•036	•018	—
19	•009	•053	•053	•028	•037

Orifice	Row				
	1	2	3	4	5
1	0.836	1.388	1.457	1.280	0.838
2	•580	•610	•989	1.154	•810
3	•449	•415	•615	•992	•289
4	•411	•360	•254	•670	•060
5	•309	•265	•204	•305	•088
6	•241	•246	•237	•184	•069
7	•229	•161	•220	•150	•089
8	•171	•211	•273	•247	•026
9	•156	•141	•151	•106	•018
10	•093	•177	•131	•088	•097
11	•100	•083	•141	•054	—
12	•060	•106	•035	—	•045
13	•055	•027	•035	—	•000
14	•123	•062	•041	•000	—
15	•000	—	•009	•018	•063
16	•044	•034	•035	—	•009
17	—	•009	•035	—	•044
18	—	•017	•018	—	•018
19	•009	•061	•027	—	•000

$c_m' = 0.177$
 $c_m' = 0.097$
 $c_b' = .074$

$x'_{cp} = 19.5$
 $y'_{cp} = 42.0$

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TABLE IV.- Continued.

 $[M \approx 0.71]$

(c) $M = 0.71$
 $C_{NA} = 0.16$
 $\alpha = 4.20$
 $\delta_{aL} = 0^\circ$

(d) $M = 0.71$
 $C_{NA} = 0.20$
 $\alpha = 4.60$
 $\delta_{aL} = 0.1^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.201	1.639	1.721	1.410	0.939
2	.747	1.010	1.292	1.252	.922
3	.545	.477	.846	1.125	.479
4	.559	.503	.375	.903	.144
5	.361	.330	.256	.579	.052
6	.317	.323	.279	.272	.110
7	.270	.227	.297	.159	.070
8	.259	.266	.291	.301	.009
9	.217	.183	.210	.139	-
10	.125	.183	.172	.130	-
11	.090	.096	.148	.062	-
12	.084	.140	.061	.051	-
13	.085	.079	.052	-	.035
14	.112	.088	.064	.000	-
15	.034	.009	.017	-	.080
16	.026	.025	.043	-	.009
17	-	.018	.052	.035	-
18	-	.008	.009	.026	-
19	-	.009	.043	.054	-

Orifice	Row				
	1	2	3	3	4
1	1.426	1.613	1.829	1.473	1.037
2	.895	1.381	1.323	1.374	.987
3	.634	.871	.957	1.235	.591
4	.641	.547	.578	1.039	.169
5	.416	.374	.344	.666	.087
6	.350	.368	.389	.316	.101
7	.303	.261	.319	.204	.105
8	.270	.300	.346	.300	.017
9	.261	.226	.201	.139	-
10	.158	.191	.188	.104	-
11	.107	.106	.147	.106	.000
12	.101	.113	.069	.034	-
13	.077	.079	.035	-	.000
14	.120	.070	.072	.000	-
15	.026	.017	-	.009	-
16	-	.009	.034	-	.036
17	-	.018	.077	.000	-
18	-	.017	.026	.000	-
19	-	.008	.060	.018	.035

Orifice	Row				
	1	2	3	3	5
1	1.426	1.613	1.829	1.473	1.037
2	.895	1.381	1.323	1.374	.987
3	.634	.871	.957	1.235	.591
4	.641	.547	.578	1.039	.169
5	.416	.374	.344	.666	.087
6	.350	.368	.389	.316	.101
7	.303	.261	.319	.204	.105
8	.270	.300	.346	.300	.017
9	.261	.226	.201	.139	-
10	.158	.191	.188	.104	-
11	.107	.106	.147	.106	.000
12	.101	.113	.069	.034	-
13	.077	.079	.035	-	.000
14	.120	.070	.072	.000	-
15	.026	.017	-	.009	-
16	-	.009	.034	-	.043
17	-	.018	.077	.000	-
18	-	.017	.026	.000	-
19	-	.008	.060	.018	.035

$C_N' = 0.226$
 $C_m' = .0128$
 $C_b' = .094$

$x'_{cp} = 19.3$
 $y'_{cp} = 41.6$

$x'_{cp} = 18.7$
 $y'_{cp} = 41.7$

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TABLE IV.-- Continued.

 $[M \approx 0.71]$

(e) $M = 0.71$
 $C_{NA} = 0.26$ $\alpha = 5.4^\circ$
 $\delta_{a_L} = 0.1^\circ$ down

(f) $M = 0.72$
 $C_{NA} = 0.31$ $\alpha = 6.2^\circ$
 $\delta_{a_L} = 0.2^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.749	1.983	1.504	1.693	1.212	1	1.934	2.145	1.535	1.855	1.301
2	1.239	1.870	1.259	1.608	1.139	2	1.456	2.053	1.328	1.739	1.249
3	0.868	1.296	1.259	1.523	.758	3	1.060	1.596	1.270	1.698	.930
4	0.921	0.659	1.128	1.380	.294	4	1.006	.911	1.185	1.492	.433
5	0.593	0.485	0.808	0.961	.207	5	0.642	.604	.920	1.083	.299
6	0.505	0.458	0.675	0.383	.143	6	0.589	.499	.866	.524	.183
7	0.369	0.316	0.545	0.338	.140	7	0.487	.447	.697	.446	.147
8	0.369	0.345	0.456	0.356	.017	8	0.410	.375	.595	.490	.059
9	0.278	0.285	0.261	0.173	.000	9	0.337	.291	.370	.248	.000
10	0.191	0.242	0.205	0.146	-.060	10	0.230	.300	.228	.171	-.043
11	0.160	0.154	0.147	0.106	-.000	11	0.150	.177	.154	.113	.017
12	0.142	0.130	0.086	0.043	-.035	12	0.124	.198	.060	.042	-.009
13	0.077	0.077	0.096	0.009	-.009	13	0.076	.069	.026	.000	.000
14	0.146	0.087	0.072	0.043	0.000	14	0.144	.069	.063	0.034	.009
15	0.025	0.051	0.026	0.027	0.000	15	0.025	.042	.009	0.044	.000
16	0.026	0.042	0.042	0.068	0.043	16	0.042	.058	.017	0.034	.000
17	0.009	0.034	0.009	0.009	0.009	17	0.026	.051	.026	0.017	.000
18	0.008	0.052	0.034	0.026	0.026	18	0.008	.043	.008	0.009	.026
19	0.025	0.043	0.027	0.009	0.009	19	0.017	.017	.044	0.044	.026
c_A	0.331	0.349	0.368	0.324	0.262	c_A	0.371	0.404	0.411	0.383	0.314
c_m	.0111	.0119	.0116	.0374	.0231	c_m	.0132	.0142	.0145	.0381	.0244
C_N'	0.323	$x'_{cp} = 18.8$		$y'_{cp} = 41.5$		C_N'	0.373	$x'_{cp} = 19.1$		$y'_{cp} = 41.9$	
C_m'	.0201					C_m'	.0220				
C_b'	.134					C_b'	.157				

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TABLE IV.- Continued.

 $[M \approx 0.7]$

(g) $M = 0.72$
 $C_{H_A} = 0.35$
 $\alpha = 6.8^\circ$
 $\delta_{a_L} = 0.2^\circ$ down

(h) $M = 0.72$
 $C_{H_A} = 0.42$
 $\alpha = 7.7^\circ$
 $\delta_{a_L} = 0.6^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.105	2.146	1.595	1.836	1.195	1	2.377	2.068	1.677	1.477	1.175
2	1.587	2.122	1.334	1.788	1.123	2	1.852	1.999	1.458	1.470	1.114
3	1.256	1.822	1.331	1.755	.926	3	1.529	1.813	1.422	1.389	.943
4	1.212	1.299	1.191	1.564	.568	4	1.420	1.651	1.356	1.304	.708
5	.739	.679	1.036	1.264	.494	5	.965	1.127	1.137	1.167	.619
6	.587	.587	.949	.699	.273	6	.718	.777	1.083	.960	.464
7	.518	.456	.817	.622	.206	7	.618	.569	.935	.840	.364
8	.430	.430	.713	.544	.050	8	.520	.490	.873	.780	.107
9	.362	.358	.472	.324	.034	9	.406	.386	.582	.586	.083
10	.262	.316	.311	.212	-.060	10	.306	.369	.438	.392	-.008
11	.193	.200	.230	.165	-.009	11	.181	.228	.335	.324	.034
12	.165	.180	.076	.084	-.017	12	.202	.227	.083	.181	.042
13	.084	.086	.034	.000	.033	13	.090	.076	.067	.034	.033
14	.135	.103	.032	-.025	-.009	14	.141	.093	.039	.000	.033
15	.008	.042	.000	-.061	.052	15	.016	.008	.017	-.043	.034
16	.025	.041	.042	-.034	-.002	16	.058	.089	.025	.017	
17	-.009	.059	.042	.000	-.017	17	.009	.050	.033	-.009	
18	-.016	.043	.017	-.026	-.009	18	-.008	.050	.025	.034	
19	.000	.042	.044	.009	-.025	19	.025	.042	.043	-.017	
c_H	0.408	0.453	0.457	0.429	0.350	c_H	0.481	0.522	0.535	0.495	0.420
δ_a	.0164	.0169	.0096	.0372	.0162	c_H	.0183	.0159	.0059	.0110	.0021
$C_{H_A}^1$	0.417					$C_{H_A}^1$	0.485				
$C_{H_A}^2$.01223					$C_{H_A}^2$.0157				
C_D	.175					C_D	.204				
						x'_{op}	19.7				
						y'_{op}	42.0				

$$\frac{C_{H_A}^1}{C_D} = 0.218$$

$$\frac{y'_{op}}{x'_{op}} = 42.1$$

TABLE IV.- Continued.
 $[M \approx 0.7]$

(1) $M = 0.72$
 $c_{W_A} = 0.46$ $\alpha = 8.3^\circ$
 $c_{a_L} = 0.4^\circ$ down

(2) $M = 0.73$
 $c_{W_A} = 0.54$ $\alpha = 9.6^\circ$
 $c_{a_L} = 0.2^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.341	1.817	1.667	1.533	1.136	1	1.979	1.698	1.729	1.515	1.120
2	2.041	1.802	1.393	1.406	1.129	2	1.900	1.681	1.533	1.446	1.145
3	1.694	1.650	1.443	1.391	0.937	3	1.733	1.618	1.512	1.388	0.981
4	1.605	1.641	1.337	1.340	0.761	4	1.784	1.577	1.410	1.350	0.728
5	1.056	1.348	1.151	1.181	0.699	5	1.397	1.336	1.155	1.143	0.684
6	0.844	1.104	1.077	0.976	0.542	6	1.047	1.282	1.124	1.028	0.626
7	0.679	0.837	0.973	0.857	0.471	7	0.907	1.010	1.015	0.892	0.545
8	0.614	0.686	0.900	0.886	0.189	8	0.761	0.889	1.037	0.922	0.286
9	0.466	0.542	0.662	0.674	0.116	9	0.593	0.694	0.762	0.732	0.200
10	0.344	0.408	0.484	0.523	0.008	10	0.449	0.605	0.628	0.658	0.024
11	0.248	0.258	0.358	0.424	0.084	11	0.315	0.355	0.483	0.549	0.155
12	0.209	0.234	0.149	0.238	0.059	12	0.249	0.275	0.275	0.357	0.130
13	0.156	0.042	0.108	0.134	0.089	13	0.129	0.081	0.176	0.219	0.118
14	0.124	0.084	0.092	0.016	0.042	14	0.160	0.122	0.171	0.143	0.097
15	0.033	0.008	0.050	0.017	0.068	15	0.071	0.064	0.097	0.083	0.049
16	0.066	0.057	0.082	0.033	0.033	16	0.087	0.110	0.143	0.105	
17	0.009	0.058	0.050	0.066	0.066	17	0.033	0.048	0.056	0.103	
18	-0.008	0.008	0.049	0.051	0.031	18	-0.031	0.040	0.095	0.065	
19	0.024	0.041	0.043	0.034	0.034	19	0.024	0.056	0.083	0.074	

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.979	1.698	1.729	1.515	1.120	2	1.900	1.681	1.533	1.446	1.145
2	1.733	1.618	1.512	1.388	0.981	3	1.047	1.282	1.124	1.028	0.626
3	0.907	1.010	1.015	0.892	0.545	4	0.937	1.036	1.155	1.143	0.684
4	0.761	0.889	1.037	0.922	0.286	5	0.714	0.843	0.946	0.934	0.578

(3) $M = 0.73$
 $c_{W_A} = 0.54$ $\alpha = 9.6^\circ$
 $c_{a_L} = 0.2^\circ$ down

(4) $M = 0.73$
 $c_{W_A} = 0.600$
 $c_{m'} = -0.0066$
 $c_b' = .252$

(5) $M = 0.73$
 $x'_{cp} = 23.2$
 $y'_{cp} = 42.2$

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TABLE IV.- Continued.

 $[M \approx 0.7]$

(k) $M = 0.73$
 $C_{NA} = 0.56$
 $\alpha = 10.8^\circ$
 $\delta_{aL} = 0^\circ$

(l) $M = 0.73$
 $C_{NA} = 0.65$
 $\alpha = 12.2^\circ$
 $\delta_{aL} = 0.1^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.771	1.532	1.660	1.398	1.071	1	1.723	1.467	1.498	1.380	1.115
2	1.700	1.540	1.455	1.308	1.086	2	1.619	1.461	1.362	1.311	1.047
3	1.540	1.385	1.415	1.304	.882	3	1.461	1.347	1.266	1.227	.874
4	1.604	1.448	1.336	1.192	.732	4	1.521	1.368	1.204	1.227	.749
5	1.293	1.263	1.137	1.115	.658	5	1.286	1.204	1.089	1.097	.643
6	1.113	1.219	1.056	.940	.663	6	1.136	1.180	1.038	.931	.649
7	1.046	.994	.999	.898	.584	7	1.049	.955	.949	.859	.578
8	.882	.948	.990	.886	.383	8	.915	.982	.982	.909	.463
9	.806	.849	.582	.776	.322	9	.824	.875	.875	.600	.370
10	.648	.770	.508	.703	.151	10	.619	.804	.549	.673	.222
11	.481	.573	.681	.621	.281	11	.564	.604	.604	.647	.314
12	.383	.454	.371	.476	.264	12	.461	.566	.566	.508	.289
13	.191	.232	.315	.327	.232	13	.319	.337	.435	.407	.272
14	.212	.255	.242	.235	.222	14	.323	.336	.375	.282	.254
15	.148	.189	.246	.211	.122	15	.257	.323	.318	.293	.154
16	.188	.200	.251	.206	.16	16	.251	.301	.346	.262	
17	.131	.173	.158	.227	.17	17	.197	.276	.269	.314	
18	.099	.143	.180	.144	.18	18	.145	.207	.250	.185	
19	.008	.008	.098	.129	.19	19	.008	.000	.107	.194	

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.723	1.467	1.498	1.380	1.115	2	1.619	1.461	1.362	1.311	1.047
2	1.619	1.461	1.362	1.311	1.047	3	1.461	1.347	1.266	1.227	.874
3	1.461	1.347	1.266	1.227	.874	4	1.521	1.368	1.204	1.227	.749
4	1.521	1.368	1.204	1.227	.749	5	1.286	1.204	1.089	1.097	.643
5	1.286	1.204	1.089	1.097	.643	6	1.136	1.180	1.038	.931	.649
6	1.136	1.180	1.038	.931	.649	7	1.049	.955	.949	.859	.578
7	1.049	.955	.949	.859	.578	8	.915	.982	.982	.909	.463
8	.915	.982	.982	.909	.463	9	.824	.875	.875	.600	.370
9	.824	.875	.875	.600	.370	10	.619	.804	.549	.673	.222
10	.619	.804	.549	.673	.222	11	.564	.604	.604	.647	.314
11	.564	.604	.604	.647	.314	12	.461	.566	.566	.508	.289
12	.461	.566	.566	.508	.289	13	.319	.337	.435	.407	.272
13	.319	.337	.435	.407	.272	14	.323	.336	.375	.282	.254
14	.323	.336	.375	.282	.254	15	.257	.323	.318	.293	.154
15	.257	.323	.318	.293	.154	16	.251	.301	.346	.262	
16	.251	.301	.346	.262		17	.197	.276	.269	.314	
17	.197	.276	.269	.314		18	.145	.207	.250	.185	
18	.145	.207	.250	.185		19	.008	.000	.107	.194	
19	.008	.000	.107	.194							

c_n	0.679	0.708	0.656	0.645	0.551	c_m	0.707	0.739	0.674	0.663	0.571
c_m	-.0246	-.0418	-.0459	-.0505	-.0556	c_m'	-.0433	-.0645	-.0690	-.0611	-.0642
c_n'	0.641		$x'_{cp} = 30.6$			c_m'	0.665				
c_m'	-.0359		$y'_{cp} = 41.4$			c_b'	-.0536				
c_b'	.265						.274				

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TABLE IV.-- Concluded.

 $[M \approx 0.71]$

(m) $M = 0.72$
 $C_{NA} = 0.66$ $\alpha = 15.5^\circ$
 $\delta_{a,L} = 1.0^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.440	1.286	1.297	1.231	1.130
2	1.349	1.260	1.141	1.180	1.041
3	1.218	1.197	1.079	1.083	.865
4	1.233	1.164	.978	1.115	.681
5	1.063	1.020	.887	.978	.596
6	.911	.951	.835	.808	.587
7	.896	.820	.814	.766	.561
8	.761	.814	.809	.804	.413
9	.752	.734	.713	.628	.375
10	.642	.742	.675	.618	.314
11	.564	.560	.612	.574	.367
12	.451	.517	.450	.499	.358
13	.294	.374	.392	.405	.323
14	.399	.373	.402	.413	.346
15	.300	.375	.379	.306	.231
16	.397	.415	.422	.346	
17	.341	.335	.328	.374	
18	.248	.332	.333	.310	
19	.016	.024	.058	.221	
c_n	0.652	0.673	0.635	0.629	0.572
c_m	-.0654	-.0783	-.0850	-.0757	-.0729
	$c_{n'} = 0.621$		$x'_{cp} = .36.3$		
	$c_{m'} = -.0700$		$y'_{cp} = .41.9$		
	$c_{b'} = .260$				

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TABLE V
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

 $[M \approx 0.77]$

(a) $M = 0.77$
 $c_{NA} = 0$
 $\alpha = 2.2^\circ$
 $\delta_{AL} = 0.8^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.265	0.283	0.571	0.669	0.196
2	•202	•241	•181	•310	•239
3	•175	•132	•285	•088	3
4	•149	•221	•099	•234	•008
5	•109	•055	•054	•172	•008
6	•065	•122	•129	•022	•073
7	•043	•066	•044	•033	•008
8	•065	•067	•216	•156	•041
9	•061	•034	•059	•008	9
10	•032	•092	•058	•067	•201
11	•009	•032	•067	•017	•110
12	•032	•051	•042	•000	•008
13	•007	•025	•008	•084	-
14	-	•092	•076	•047	•124
15	-	•049	-	•008	•017
16	•050	•000	•000	•050	•012
17	•009	•067	•017	•025	17
18	-	•048	•008	•025	•034
19	•025	•025	•104	•017	19

(b) $M = 0.77$
 $c_{NA} = 0.04$
 $\alpha = 2.4^\circ$
 $\delta_{AL} = 0.8^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.416	0.613	0.927	1.002	0.422
2	•313	•315	•371	•539	•291
3	•207	•250	•197	•348	•142
4	•217	•296	•163	•277	•049
5	•140	•142	•117	•213	•025
6	•108	•155	•160	•011	•081
7	•097	•142	•077	•109	-
8	•086	•100	•268	•200	-
9	•104	•050	•101	•017	-
10	•032	•108	•074	•100	-
11	•034	•023	•100	•017	-
12	•040	•050	-	•008	-
13	•030	•042	-	•000	-
14	•091	•067	•039	-	•081
15	-	•033	-	•033	-
16	•033	•000	•008	-	•060
17	•009	•033	•017	-	•148
18	-	•024	•008	•016	-
19	•016	•058	•086	•042	-

(c) $M = 0.90$
 $c_{NA} = 0.04$
 $\alpha = 2.4^\circ$
 $\delta_{AL} = 0.8^\circ$ up

Orifice	Row				
	1	2	3	4	5
c _n	0.057	0.078	0.081	0.052	0.000
c _m	.0000	-.0028	.0006	.0193	.0202
c _b	0.059	0.059	0.021	x' _{cp} = 15.0	y' _{cp} = 35.5
c _n	0.084	0.109	0.123	0.086	0.025
c _m	.0009	.0014	.0021	.0242	.0246
c _b	0.059	0.054	0.035	x' _{cp} = 14.6	y' _{cp} = 38.2

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TABLE V.- Continued.

 $[M \approx 0.77]$

(c) $M = 0.77$
 $c_{NA} = 0.11$
 $\alpha = 3.5^\circ$
 $\delta_{aL} = 0.8^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.731	1.221	1.325	1.268	0.873	1	0.927	1.439	1.543	1.366	1.014
2	0.534	0.779	0.963	1.128	0.772	2	0.645	1.072	1.176	1.260	.890
3	0.390	0.368	0.534	0.900	0.250	3	0.498	0.563	0.708	1.051	.380
4	0.386	0.382	0.304	0.574	0.081	4	0.477	0.436	0.401	.817	.097
5	0.301	0.249	0.170	0.371	0.041	5	0.387	0.282	0.255	.541	.075
6	0.226	0.242	0.255	0.108	0.105	6	0.237	0.319	0.319	.130	.089
7	0.247	0.217	0.174	0.227	0.042	7	0.269	0.228	0.196	.184	.059
8	0.172	0.143	0.331	0.254	0.000	8	0.204	0.210	0.353	.232	-.016
9	0.198	0.108	0.167	0.091	0.058	9	0.224	0.125	0.167	.100	-.033
10	0.096	0.141	0.090	0.124	0.232	10	0.120	0.120	0.141	.132	-.265
11	0.094	0.086	0.116	0.034	0.092	11	0.094	0.117	0.166	.051	-.067
12	0.064	0.058	0.017	0.033	0.008	12	0.088	0.092	0.000	0.033	-.008
13	0.037	0.067	0.017	0.092	0.065	13	0.044	0.033	0.041	-.108	-.073
14	0.099	0.075	0.054	0.139	0.017	14	0.099	0.075	0.038	-.139	-.008
15	-	0.033	-	0.008	-	0.025	15	-	0.008	-	0.008
16	0.025	-	0.016	0.016	0.050	16	0.041	-	0.024	0.008	-.050
17	0.000	0.058	0.000	0.041	0.000	17	0.000	0.049	0.017	-.041	-.050
18	-	0.032	0.008	0.033	-	0.034	18	-	0.032	0.017	-.042
19	0.016	0.016	0.016	0.086	0.008	19	0.032	0.033	0.077	0.000	

(d) $M = 0.77$
 $c_{NA} = 0.11$
 $\alpha = 3.8^\circ$
 $\delta_{aL} = 0.8^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.927	1.439	1.543	1.366	1.014	1	0.927	1.439	1.543	1.366	1.014
2	0.645	1.072	1.176	1.260	.890	2	0.645	1.072	1.176	1.260	.890
3	0.498	0.563	0.708	1.051	.380	3	0.498	0.563	0.708	1.051	.380
4	0.477	0.436	0.401	.817	.097	4	0.477	0.436	0.401	.817	.097
5	0.387	0.282	0.255	.541	.075	5	0.387	0.282	0.255	.541	.075
6	0.237	0.319	0.319	.130	.089	6	0.237	0.319	0.319	.130	.089
7	0.269	0.228	0.196	.184	.059	7	0.269	0.228	0.196	.184	.059
8	0.204	0.210	0.232	-.016		8	0.204	0.210	0.232	-.016	
9	0.224	0.125	0.100	-.033		9	0.224	0.125	0.100	-.033	
10	0.120	0.120	0.132	-.265		10	0.120	0.120	0.132	-.265	
11	0.094	0.117	0.117	-.067		11	0.094	0.117	0.117	-.067	
12	0.088	0.092	0.000			12	0.088	0.092	0.000		
13	0.044	0.033	0.041	-.073		13	0.044	0.033	0.041	-.073	
14	0.099	0.075	0.038			14	0.099	0.075	0.038		
15	-	0.008	-			15	-	0.008	-		
16	0.025	-	0.016	0.050		16	0.041	-	0.024	0.008	
17	0.000	0.058	0.000	0.041		17	0.000	0.049	0.017	-.041	
18	-	0.032	0.008	0.034		18	-	0.032	0.017	-.042	
19	0.016	0.016	0.016	0.086		19	0.032	0.033	0.077	0.000	

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TABLE V.- Continued.

 $[M \approx 0.77]$

(e) $M = 0.77$ $\alpha = 4.9^\circ$
 $c_{NA} = 0.21$ $\delta_{aL} = 0.8^\circ$ up

(f) $M = 0.77$ $\alpha = 5.5^\circ$
 $c_{NA} = 0.25$ $\delta_{aL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.375	1.706	1.920	1.593	1.188	1	1.625	1.907	2.055	1.753	1.384
2	.917	1.504	1.490	1.490	1.118	2	1.090	1.655	1.592	1.664	1.230
3	.666	.935	1.093	1.323	.691	3	.806	1.262	1.282	1.476	.788
4	.665	.682	.592	1.173	.208	4	.790	.898	.946	1.266	.261
5	.491	.377	.401	.864	.074	5	.590	.457	.500	.957	.171
6	.396	.404	.401	.343	.128	6	.444	.442	.490	.456	.142
7	.320	.323	.335	.258	.067	7	.390	.382	.331	.392	.082
8	.352	.263	.382	.340	.000	8	.337	.281	.440	.346	.008
9	.256	.198	.224	.124	-	9	.304	.220	.262	.154	- .032
10	.143	.190	.163	.148	-	10	.172	.204	.185	.170	- .211
11	.119	.093	.173	.059	-	11	.167	.130	.211	.083	- .025
12	.080	.108	.025	.032	.000	12	.086	.114	.008	.048	.000
13	.044	.058	.025	.075	-	13	.051	.041	.049	- .049	- .040
14	.106	.100	.053	.155	-	14	.097	.098	.038	- .137	- .008
15	.000	.000	-	.017	-	15	-	.016	.000	- .117	.000
16	.041	.008	.016	-	.066	16	.048	-	.008	- .016	- .055
17	.008	.049	-	.008	-	17	.000	-	.064	- .016	- .040
18	-	.048	.000	.024	-	18	-	.039	.008	- .016	- .033
19	.032	.049	.049	.068	.000	19	.024	.040	.075	.017	
c_n	0.258	0.289	0.288	0.272	0.196	c_n	0.295	0.329	0.343	0.315	0.249
c_m	.0101	.0146	.0149	.0440	.0383	c_m	.0130	.0193	.0208	.0448	.0357
						c_n'	0.304	$x'_{op} = 16.0$			
						c_m'	.0266	$y'_{op} = 41.4$			
						c_b'	.128	$x'_{op} = 16.3$			

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TABLE V.- Continued.

 $[M \approx 0.77]$

(g) $M = 0.77$
 $c_{NA} = 0.31$
 $\alpha = 6.2^\circ$
 $\delta_{a_L} = 0.6^\circ$ up

(h) $M = 0.78$
 $c_{NA} = 0.34$
 $\alpha = 6.6^\circ$
 $\delta_{a_L} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.914	2.047	2.064	1.923	1.474	1	2.078	2.212	2.069	1.918	1.532
2	1.391	1.846	1.791	1.805	1.382	2	1.538	1.915	1.830	1.853	1.451
3	1.070	1.500	1.542	1.681	0.969	3	1.235	1.601	1.580	1.718	1.040
4	1.001	1.311	1.334	1.466	0.391	4	1.108	1.392	1.446	1.559	0.476
5	0.646	0.704	0.711	1.193	0.257	5	0.727	0.786	0.894	1.231	0.321
6	0.585	0.523	0.649	0.639	0.188	6	0.594	0.596	0.791	0.742	0.218
7	0.458	0.462	0.444	0.514	0.114	7	0.509	0.493	0.590	0.585	0.138
8	0.427	0.321	0.497	0.482	0.016	8	0.478	0.384	0.568	0.566	0.040
9	0.350	0.250	0.308	0.209	0.000	9	0.391	0.281	0.331	0.257	-0.008
10	0.193	0.250	0.238	0.209	-0.193	10	0.208	0.265	0.245	0.216	-0.201
11	0.182	0.189	0.209	0.090	-0.024	11	0.190	0.166	0.225	0.090	0.008
12	0.124	0.137	0.040	0.024	-0.008	12	0.147	0.137	0.016	0.039	0.016
13	0.079	0.073	0.024	-0.049	-0.047	13	0.086	0.065	0.032	-0.065	-0.024
14	0.120	0.081	0.030	-0.175	0.000	14	0.127	0.081	0.045	-0.158	-0.016
15	-0.008	0.000	-0.008	-0.115	0.000	15	-0.016	0.008	-0.008	-0.107	-0.025
16	0.040	0.008	0.016	-0.064	0.000	16	0.032	0.023	0.000	-0.064	-0.040
17	0.000	0.056	0.008	-0.024	0.000	17	0.008	0.032	0.000	-0.000	-0.040
18	-0.046	0.024	0.024	-0.057	0.008	18	-0.046	-0.008	0.048	0.024	-0.041
19	0.024	0.040	0.108	0.008	0.000	19	0.039	0.048	0.074	0.000	-0.000
c_n	0.360	0.402	0.420	0.377	0.307	c_n	0.393	0.431	0.454	0.407	0.340
c_m	.0162	.0223	.0226	.0514	.0360	c_m	.0179	.0256	.0254	.0506	.0355
c_b'	0.370	$x'_{cp} = 16.8$	$y'_{cp} = 41.9$			$c_N' = 0.400$	$x'_{cp} = 16.9$				
c_m'	0.035					$c_m' = 0.324$					
c_b'	.155					$c_b' = .168$					

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TABLE V.- Continued.

 $[M \approx 0.77]$

(1) $M = 0.78$
 $c_{N_A} = 0.42$
 $\alpha = 7.6^\circ$
 $\delta_{a_L} = 0.4^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	2.358	2.128	1.835	1.988	1.415	1	2.429	1.946	1.822	1.672	1.299
2	1.814	2.027	1.697	1.903	1.314	2	1.834	1.962	1.674	1.595	1.210
3	1.536	1.787	1.578	1.736	1.143	3	1.586	1.774	1.502	1.515	1.079
4	1.435	1.653	1.486	1.642	.748	4	1.488	1.735	1.484	1.469	.762
5	1.954	1.235	1.190	1.393	.577	5	1.087	1.338	1.199	1.299	.640
6	1.739	.945	1.098	.970	.436	6	.842	1.072	1.137	.969	.545
7	6.32	.764	.894	.814	.243	7	.715	.920	.935	.865	.380
8	.570	.469	.846	.789	.055	8	.683	.606	.906	.894	.150
9	.482	.385	.548	.440	.008	9	.531	.505	.628	.608	.071
10	.262	.305	.356	.359	-.184	10	.331	.417	.442	.503	-.168
11	.206	.188	.312	.196	-.016	11	.247	.270	.408	.350	.024
12	.147	.153	.024	.087	.016	12	.224	.193	.088	.213	.081
13	.093	.040	.024	-.016	.000	13	.100	.057	.080	.024	.016
14	.127	.097	.022	-.0158	.008	14	.135	.089	.067	-.087	-.056
15	.031	-.016	.000	-.099	.008	15	.031	.016	.064	-.074	-.008
16	.040	.031	.016	-.064	-.016	16	.079	.047	.055	.000	
17	.000	.024	-.016	-.024	-.024	17	.008	.024	.024	-.008	
18	-.038	-.008	.039	-.057	-.057	18	-	.031	.024	.039	.024
19	.016	.040	.099	.049	.049	19	.031	.032	.107	.016	

c_A	0.477	0.520	0.537	0.504	0.414	c_A	0.532	0.578	0.582	0.542	0.452
c_m	.0221	.0280	.0164	.0432	.0260	c_m	.0158	.0182	.0035	.0150	.0083
c_b											

$$\begin{aligned} c_N' &= 0.485 \\ c_m' &= 0.308 \\ c_b' &= .205 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 18.7 \\ y'_{cp} &= 42.2 \end{aligned}$$

$$\begin{aligned} c_N' &= 0.532 \\ c_m' &= 0.179 \\ c_b' &= .223 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 21.6 \\ y'_{cp} &= 41.9 \end{aligned}$$

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TABLE V.- Continued.

 $[M \approx 0.77]$

(k) $M = 0.78$
 $C_{NA} = 0.50$
 $\alpha = 8.9^\circ$
 $\delta_{aL} = 0.6^\circ \text{ up}$

(l) $M = 0.78$
 $C_{NA} = 0.58$
 $\alpha = 10.4^\circ$
 $\delta_{aL} = 0.2^\circ \text{ up}$

Orifice	Row				
	1	2	3	4	5
1	2.316	1.760	1.691	1.594	1.233
2	1.934	1.727	1.518	1.547	1.133
3	1.633	1.612	1.456	1.427	1.023
4	1.625	1.667	1.396	1.401	0.737
5	1.197	1.385	1.195	1.275	0.662
6	0.954	1.163	1.144	0.956	0.605
7	0.846	1.021	0.984	0.894	0.459
8	0.754	0.721	0.965	0.902	0.236
9	0.612	0.631	0.747	0.685	0.150
10	0.368	0.543	0.582	0.604	-
11	0.312	0.367	0.486	0.455	0.997
12	0.200	0.248	0.191	0.330	0.105
13	0.128	0.080	0.143	0.168	0.055
14	-	0.174	0.096	0.103	-
15	-	0.031	0.040	0.088	0.008
16	-	0.094	0.077	0.103	0.056
17	-	0.008	0.047	0.056	0.087
18	-	0.015	0.031	0.040	0.040
19	-	0.031	0.016	0.115	0.073
c_A	0.580	0.615	0.623	0.586	0.482
c_B	.0127	.0037	-.0162	-.0060	-.0095
c_m					

$x'_{op} = 24.4$
 $y'_{op} = 41.9$

$C_{NA}' = 0.571$	$x'_{op} = 28.5$
$C_m' = .0033$	$y'_{op} = 42.0$
$C_B' = .239$	

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Orifice	Row				
	1	2	3	4	5
1	1.950	1.681	1.670	1.521	1.254
2	1.796	1.633	1.507	1.495	1.185
3	1.685	1.529	1.456	1.395	1.034
4	1.679	1.551	1.427	1.369	0.775
5	1.321	1.323	1.134	1.213	0.694
6	1.057	1.237	1.134	0.966	0.620
7	0.991	1.083	0.963	0.904	0.523
8	0.836	0.859	1.057	0.923	0.370
9	0.786	0.775	0.811	0.733	0.277
10	0.575	0.671	0.755	0.716	0.032
11	0.435	0.532	0.670	0.568	0.210
12	0.324	0.360	0.334	0.432	0.193
13	0.178	0.233	0.293	0.272	0.179
14	0.198	0.169	0.192	0.134	0.183
15	0.078	0.150	0.200	0.139	0.114
16	0.142	0.124	0.174	0.159	
17	0.066	0.142	0.127	0.189	
18	0.008	0.096	0.149	0.129	
19	0.031	0.008	0.115	0.122	
c_A	0.653	0.681	0.702	0.649	0.555
c_B					
c_m					

$C_{NA}' = 0.637$
 $C_m' = -.0221$
 $C_B' = .267$

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TABLE V.- Concluded.

 $[M \approx 0.77]$

(m) $M = 0.78$
 $c_{NA} = 0.61$
 $\alpha = 11.9^\circ$
 $\delta_{BL} = 0^\circ$
 $M \approx 0.77$

Orifice	Row				
	1	2	3	4	5
1	1.0778	1.0548	1.0583	1.0434	1.0189
2	1.0674	1.0484	1.0407	1.0428	1.0120
3	1.0494	1.0370	1.0327	1.0309	0.979
4	1.0566	1.0370	1.0268	1.0313	0.758
5	1.0328	1.0226	1.0121	1.0180	0.700
6	1.0096	1.0171	1.0049	0.943	0.673
7	1.0019	1.0070	0.982	0.912	0.586
8	0.906	0.910	1.0004	0.932	0.456
9	0.842	0.836	0.833	0.779	0.371
10	0.612	0.789	0.777	0.769	0.135
11	0.508	0.657	0.692	0.664	0.290
12	0.430	0.503	0.397	0.540	0.305
13	0.284	0.297	0.364	0.360	0.233
14	0.276	0.296	0.324	0.259	0.255
15	0.218	0.276	0.295	0.220	0.155
16	0.267	0.247	0.299	0.262	
17	0.197	0.260	0.253	0.283	
18	0.168	0.184	0.266	0.177	
19	0.016	0.024	0.131	0.178	
c_A	0.703	0.723	0.716	0.690	0.591
c_B	-0.387	-0.0550	-0.0684	-0.0594	-0.0591
c_N'	0.673			$x'_{cp} = 32.4$	
c_m'	-0.0495			$y'_{cp} = 41.9$	
c_D'	.282				

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TABLE VI
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$[M \approx 0.83]$

(a) $M = 0.82$
 $c_{NA} = 0.02$
 $\alpha = 2.3^\circ$
 $\delta_{aL} = 0.1^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	0.344	0.354	0.695	0.791	0.301	1	0.397	0.487	0.887	0.923	0.430
2	•221	•302	•242	•424	•242	2	•286	•326	•358	•554	•276
3	•166	•234	•147	•303	•118	3	•259	•230	•184	•327	•106
4	•164	•236	•156	•289	•015	4	•181	•242	•135	•304	- .007
5	•077	•059	•096	•153	•015	5	•086	•106	•094	•216	.052
6	•107	•109	•125	•010	•065	6	•124	•146	•141	•029	.043
7	•058	•088	•049	•049	•015	7	•095	•096	•106	•077	.037
8	•077	•089	•231	•199	- •037	8	•095	•117	•237	•196	- .058
9	•070	•067	•083	•045	- •052	9	•076	•074	•096	•037	- .037
10	•043	•112	•074	•060	- •112	10	•071	•103	•065	•073	- .206
11	•015	•035	•090	•038	- •045	11	•030	•028	•081	•037	- .037
12	•029	•068	•000	•015	- •008	12	•043	•059	•000	•036	- .052
13	•013	•045	•015	- •090	- •044	13	•020	•015	•022	•067	- .036
14	•089	•068	•041	- •022	- •022	14	•109	•089	•054	•080	- .044
15	- •044	- •037	•000	- •107	- •008	15	- •050	- •036	- •007	- •083	- .008
16	•007	•000	•000	- •015	•000	16	•015	•014	- •007	- •037	- .037
17	- •023	•052	•037	- •044	•000	17	- •038	•036	•015	- •007	- .007
18	- •050	•000	•007	- •015	•000	18	- •035	•000	•000	- •037	- .037
19	•022	•037	•054	- •008	•000	19	•007	•022	•061	•007	- .007
c_n	0.063	0.089	0.101	0.085	0.027	c_n	0.079	0.101	0.110	0.090	0.035
c_m	.0025	-.0022	.0006	.0142	.0141	c_m	.0004	-.0009	.0032	.0208	.0174
c_b'	$c_N' = 0.078$ $c_m' = 0.043$ $c_b' = .031$		$x'_{cp} = 19.4$ $y'_{cp} = 40.3$			$c_N' = 0.087$ $c_m' = .0068$ $c_b' = .035$		$x'_{cp} = 17.2$ $y'_{cp} = 39.7$			

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TABLE VI.-- Continued.
[$M \approx 0.83$]

(c) $M = 0.83$
 $c_{NA} = 0.09$
 $\alpha = 3.1^\circ$
 $\delta_{aL} = 0.7^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.623	0.947	1.194	1.315	0.597
2	•430	•466	•709	•482	•377
3	•343	•362	•355	•448	•191
4	•309	•345	•276	•437	•050
5	•208	•200	•168	•299	•095
6	•209	•194	•234	•133	•092
7	•161	•191	•163	•133	•052
8	•170	•165	•310	•252	-
9	•129	•124	•162	•066	-
10	•091	•139	•086	•109	-
11	•053	•041	•102	•015	-
12	•078	•088	•015	•007	-
13	•039	•037	-	•015	-
14	•101	•073	-	•047	-
15	-	•043	-	•022	-
16	-	•007	•007	•000	-
17	-	•045	•029	•007	-
18	-	•035	•007	•014	-
19	-	•014	•029	•060	•007

Orifice	Row				
	1	2	3	4	5
1	1.045	1.452	1.704	1.747	1.146
2	•601	•641	•820	1.336	•645
3	•490	•471	•465	•793	•180
4	•455	•466	•452	•452	•091
5	•309	•302	•250	•370	•101
6	•319	•307	•333	•217	•098
7	•262	•283	•275	•188	•051
8	•253	•240	•400	•308	-
9	•188	•181	•204	•130	-
10	•118	•174	•121	•101	-
11	•089	•075	•123	•052	-
12	•084	•094	•029	•000	-
13	•039	•022	•000	-	-
14	•093	•073	•060	•193	-
15	-	•028	-	•036	-
16	-	•007	•000	•014	-
17	-	•022	•043	•014	-
18	-	•056	•000	•007	-
19	•021	•014	•060	•022	-

Orifice	Row				
	1	2	3	4	5
c _n	0.128	0.151	0.168	0.123	0.058
c _m	.0025	.0026	.0071	.0286	.0263

(d) $M = 0.83$
 $c_{NA} = 0.16$
 $\alpha = 3.8^\circ$
 $\delta_{aL} = 0.8^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	1.045	1.452	1.704	1.747	1.146
2	•601	•641	•820	1.336	•645
3	•490	•471	•465	•793	•180
4	•455	•466	•452	•452	•091
5	•309	•302	•250	•370	•101
6	•319	•307	•333	•217	•098
7	•262	•283	•275	•188	•051
8	•253	•240	•400	•308	-
9	•188	•181	•204	•130	-
10	•118	•174	•121	•101	-
11	•089	•075	•123	•052	-
12	•084	•094	•029	•000	-
13	•039	•022	•000	-	-
14	•093	•073	•060	•193	-
15	-	•028	-	•036	-
16	-	•007	•000	•014	-
17	-	•022	•043	•014	-
18	-	•056	•000	•007	-
19	•021	•014	•060	•022	-

$c_n' = 0.186$
 $c_m' = .0186$
 $c_b' = .075$

$x'_{cp} = 15.6$
 $y'_{cp} = 39.0$

$x'_{cp} = 15.0$
 $y'_{cp} = 40.1$

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TABLE VI.- Continued.

 $[M \approx 0.83]$

(e) $M = 0.83$ $\alpha = 4.5^\circ$ up
 $c_{N_A} = 0.22$ $\delta_{a_L} = 0.8^\circ$ up

(f) $M = 0.83$ $\alpha = 5.2^\circ$
 $c_{N_A} = 0.26$ $\delta_{a_L} = 0.8^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.345	1.717	1.906	1.920	1.507	1	1.543	1.846	2.003	1.999	1.581
2	.850	1.532	1.469	1.617	1.359	2	1.068	1.643	1.585	1.738	1.462
3	.667	.742	1.296	1.477	.387	3	.873	1.318	1.439	1.552	.895
4	.621	.521	.659	1.160	.049	4	.788	.833	1.236	1.421	.028
5	.466	.377	.314	.544	.065	5	.562	.456	.474	1.192	.000
6	.393	.392	.369	.253	.133	6	.490	.453	.465	.371	.097
7	.354	.386	.322	.216	.058	7	.424	.483	.336	.250	.072
8	.326	.297	.427	.288	.014	8	.424	.303	.421	.294	.014
9	.247	.224	.239	.122	-.079	9	.273	.228	.215	.092	-.071
10	.173	.202	.121	.144	-.360	10	.192	.192	.154	.128	-.370
11	.096	.108	.130	.051	-.088	11	.117	.107	.135	.058	-.058
12	.097	.123	.050	.028	-.007	12	.131	.107	.021	.014	-.036
13	.045	.036	.022	-.072	-.042	13	.038	.065	.028	-.050	-.014
14	.107	.073	.067	-.192	-.000	14	.134	.079	.059	-.232	-.036
15	-.042	-.029	-.036	-.133	-.022	15	-.042	-.028	-.043	-.124	.022
16	.000	-.007	.014	-.058	-.000	16	.007	-.028	.000	-.064	-.000
17	-.030	.043	.000	-.036	-.000	17	-.037	.056	.007	-.000	-.000
18	-.048	.022	.000	-.022	-.007	18	-.027	.014	.007	-.029	-.000
19	.000	.014	.067	.007	-.000	19	.000	.035	.059	.022	-.000
c_n	0.246	0.283	0.287	0.263	0.172	c_n	0.301	0.323	0.353	0.310	0.237
c_m	.0109	.0136	.0159	.0471	.0426	c_m	.0115	.0203	.0256	.0555	.0462
c_b'	0.253	$x'_{cp} = 15.3$	$y'_{cp} = 41.1$			c_b'	0.302	$x'_{cp} = 14.9$	$y'_{cp} = 41.8$		
c_m'	0.246					c_m'	0.307				
c_b'	.104					c_b'	.126				

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TABLE VI.- Continued.

 $[M \approx 0.83]$

(g) $M = 0.84$
 $C_{NA} = 0.31$
 $\alpha = 5.7^\circ$
 $\delta_{aL} = 0.6^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	1.708	1.919	2.060	2.074	1.689
2	1.205	1.704	1.669	1.808	1.525
3	1.026	1.494	1.522	1.651	1.214
4	.922	1.367	1.367	1.505	.266
5	.691	.633	.972	1.321	.028
6	.612	.522	.747	.915	.055
7	.509	.496	.507	.513	.035
8	.482	.532	.452	.355	.014
9	.379	.204	.198	.070	-.035
10	.176	.197	.139	.077	-.288
11	.123	.119	.140	.029	-.043
12	.081	.106	.021	.014	-.007
13	.056	.064	.021	-.078	-.007
14	.011	.064	.045	-.146	.007
15	-.014	-.035	-.028	-.144	.014
16	-.007	-.007	-.007	-.028	-.007
17	-.036	.056	.000	-.049	-.000
18	-.041	.000	-.007	.007	-.007
19	.000	.035	.058	-.014	.014

Orifice	Row				
	1	2	3	4	5
1	1.807	1.983	2.109	2.149	1.687
2	1.340	1.748	1.752	1.842	1.579
3	1.105	1.612	1.559	1.732	1.264
4	1.025	1.424	1.442	1.561	.547
5	.791	.825	1.120	1.376	.271
6	.704	.645	1.120	1.031	.081
7	.611	.617	.821	1.013	.014
8	.584	.646	.786	.628	.000
9	.526	.334	.196	.194	-.041
10	.174	.188	.110	.083	-.215
11	.129	.104	.118	-.007	.000
12	.101	.105	.007	-.034	-.007
13	.050	.042	.014	-.070	-.007
14	.096	.070	.058	-.213	.000
15	-.034	-.014	-.042	-.114	.014
16	-.027	-.000	.014	-.028	.000
17	-.043	-.034	.021	-.021	.021
18	-.027	-.021	-.021	-.035	-.035
19	.014	.041	.079	.021	.047

Orifice	Row				
	1	2	3	4	5
c_n	0.338	0.394	0.400	0.374	0.300
c_m	.0178	.0260	.0315	.0573	.0482
c_n'	0.361	$x'_{cp} = 15.2$			
c_m'	•.0353	$y'_{cp} = 42.1$			
c_b'	•.152				

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TABLE VI.- Continued.
 $[M \approx 0.85]$

(1) $M = 0.84$
 $C_{NA} = 0.42$
 $\alpha = 6.9^\circ$
 $\delta_{aL} = 0.5^\circ$ up

(3) $M = 0.84$
 $C_{NA} = 0.46$
 $\alpha = 7.4^\circ$
 $\delta_{aL} = 0.4^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	1.931	2.073	2.194	2.243	1.765	1	2.048	2.140	2.255	2.286	1.837
2	1.451	1.844	1.806	1.921	1.675	2	1.508	1.924	1.871	1.975	1.720
3	1.259	1.664	1.639	1.792	1.355	3	1.343	1.763	1.712	1.837	1.420
4	1.160	1.541	1.549	1.643	0.805	4	1.220	1.579	1.596	1.735	0.887
5	0.893	1.045	1.245	1.455	0.531	5	0.977	1.246	1.301	1.518	0.590
6	0.825	0.796	1.219	1.114	0.262	6	0.874	0.910	1.266	1.153	0.380
7	0.741	0.730	1.105	1.105	0.111	7	0.826	0.825	1.199	1.171	0.201
8	0.714	0.724	1.092	0.936	-0.020	8	0.773	0.776	1.237	0.895	0.020
9	0.694	0.774	0.382	0.414	-0.034	9	0.776	0.804	0.539	0.494	-0.048
10	0.225	0.186	0.150	0.309	-0.269	10	0.297	0.227	0.237	0.404	-0.281
11	0.135	0.078	0.097	0.084	-0.007	11	0.134	0.097	0.103	0.217	-0.028
12	0.113	0.111	-0.048	-0.048	-0.041	12	0.119	0.083	-0.041	0.014	0.014
13	0.037	0.021	-0.021	-0.021	-0.125	13	0.018	0.007	-0.041	-0.097	0.000
14	0.096	0.062	-0.013	-0.013	-0.266	14	0.088	0.048	0.000	-0.278	0.000
15	-0.027	-0.027	-0.021	-0.021	-0.156	15	-0.040	-0.041	-0.062	-0.183	-0.014
16	-0.014	-0.007	-0.020	-0.020	-0.076	16	-0.014	-0.013	-0.007	-0.089	0.000
17	-0.043	0.034	0.007	0.007	-0.041	17	-0.014	0.034	0.000	-0.054	0.000
18	-0.046	0.000	-0.027	-0.027	-0.035	18	-0.059	0.000	-0.007	-0.049	0.000
19	0.013	0.048	0.048	0.078	0.007	19	0.007	0.041	0.071	0.007	0.000
c_n	0.444	0.497	0.528	0.504	0.424	c_n	0.479	0.531	0.579	0.539	0.469
c_m	.0205	.0285	.0389	.0606	.0475	c_m	.0211	.0318	.0352	.0575	.0449
c_b'	0.473	$x'_{cp} = 17.0$	$y'_{cp} = 42.9$				$C_N' = 0.510$	$x'_{cp} = 17.6$			
		$C_m' = 0.380$	$y'_{cp} = 43.1$				$C_b' = 0.220$				

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TABLE VI.- Continued.
 $[M \approx 0.83]$

(k) $M = 0.85$
 $C_{NA} = 0.52$
 $\alpha = 8.2^\circ$
 $\delta_{aL} = 0.6^\circ$ up

(l) $M = 0.85$
 $C_{NA} = 0.56$
 $\alpha = 10.1^\circ$
 $\delta_{aL} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.203	2.236	2.364	2.350	1.902	1	2.051	1.589	1.900	1.219	1.027
2	1.577	2.043	1.995	2.023	1.750	2	1.863	1.564	1.720	1.133	.924
3	1.499	1.865	1.806	1.885	1.406	3	1.644	1.546	1.628	1.068	.740
4	1.319	1.717	1.716	1.739	.758	4	1.602	1.469	1.620	1.034	.543
5	1.098	1.439	1.393	1.487	.616	5	1.252	1.335	.794	.958	.484
6	1.005	1.061	1.376	1.078	.492	6	1.027	1.184	.794	.683	.444
7	.903	.938	1.267	.963	.373	7	.917	1.041	.689	.683	.461
8	.894	.891	1.330	.901	.169	8	.838	.815	.763	.680	.330
9	.887	.808	.565	.663	.093	9	.643	.730	.645	.552	.311
10	.309	.267	.412	.614	-	10	.511	.600	.632	.571	-
11	.141	.154	.328	.453	.042	11	.428	.435	.613	.520	-
12	.126	.117	.068	.276	.069	12	.355	.335	.360	.396	.028
13	.043	.048	.027	.110	.060	13	.213	.179	.339	.322	.400
14	.115	.055	.013	-	.182	14	.203	.185	.309	.027	.395
15	-	.020	-	.014	-	15	.107	.155	.294	-	.307
16	.034	.000	.020	-	.021	16	.126	.199	.230	.298	
17	-	.028	.041	.007	-	17	.084	.196	.305	.283	
18	-	.039	.014	.027	.000	18	.013	.116	.288	.255	
19	.013	.020	.092	.028		19	.033	-	.007	.197	.180
c_n	0.535	0.595	0.670	0.633	0.538	c_n	0.635	0.651	0.682	0.520	0.449
c_m	.0177	.0297	.0204	.0245	.0211	c_m	-.0081	-.0238	-.0553	-.0400	-.0439

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.051	1.589	1.900	1.219	1.027	2	1.863	1.564	1.720	1.133	.924
2	1.863	1.546	1.628	1.068	.740	3	1.644	1.546	1.628	1.068	.740
3	1.644	1.546	1.628	1.068	.740	4	1.602	1.469	1.620	1.034	.543
4	1.602	1.469	1.620	1.034	.543	5	1.252	1.335	.794	.958	.484
5	1.252	1.335	.794	.958	.484	6	1.027	1.184	.794	.683	.444
6	1.027	1.184	.794	.683	.444	7	.917	1.041	.689	.683	.461
7	.917	1.041	.689	.683	.461	8	.838	.815	.763	.680	.330
8	.838	.815	.763	.680	.330	9	.643	.730	.645	.552	.311
9	.643	.730	.645	.552	.311	10	.511	.600	.632	.571	-
10	.511	.600	.632	.571	-	11	.428	.435	.613	.520	-
11	.428	.435	.613	.520	-	12	.355	.335	.360	.396	.028
12	.355	.335	.360	.396	.028	13	.213	.179	.339	.322	.400
13	.213	.179	.339	.322	.400	14	.203	.185	.309	.027	.395
14	.203	.185	.309	.027	.395	15	.107	.155	.294	-	.307
15	.107	.155	.294	-	.307	16	.126	.199	.230	.298	
16	.126	.199	.230	.298		17	.084	.196	.305	.283	
17	.084	.196	.305	.283		18	.013	.116	.288	.255	
18	.013	.116	.288	.255		19	.033	-	.007	.197	
19	.033	-	.007	.197							

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$$\begin{aligned} C_N^1 &= 0.583 \\ C_m^1 &= 0.256 \\ C_b^1 &= .254 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 20.6 \\ y'_{cp} &= 43.5 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 28.9 \\ y'_{cp} &= 40.1 \end{aligned}$$

TABLE VI.- Concluded.

 $[M \approx 0.85]$

(m) $M = 0.84$
 $c_{NA} = 0.62$
 $\alpha = 11.1^\circ$
 $\delta_{ATL} = 1.7^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.981	1.667	1.786	1.523	1.152
2	1.855	1.663	1.675	1.485	1.110
3	1.681	1.530	1.567	1.389	0.929
4	1.669	1.524	1.577	1.434	0.670
5	1.306	1.309	1.022	1.160	0.661
6	1.143	1.239	1.013	0.951	0.584
7	0.962	1.033	0.851	0.853	0.585
8	0.900	0.943	0.966	0.898	0.424
9	0.764	0.820	0.824	0.688	0.386
10	0.610	0.710	0.774	0.723	0.205
11	0.519	0.538	0.709	0.618	0.366
12	0.435	0.445	0.469	0.517	0.344
13	0.280	0.289	0.373	0.384	0.327
14	0.264	0.295	0.347	0.384	0.341
15	0.134	0.237	0.321	0.273	0.265
16	0.135	0.285	0.371	0.334	
17	0.148	0.243	0.278	0.330	
18	0.085	0.192	0.289	0.276	
19	-0.013	0.007	0.155	0.201	
c_n	0.697	0.732	0.765	0.707	0.590
c_m	-0.0229	-0.0458	-0.0712	-0.0676	-0.0792
c_N^I	0.687				
c_m^I	-0.0469				
c_b^I	.289				
			$x^I_{cp} = 31.8$		
			$y^I_{cp} = 42.1$		

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TABLE VII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
 $[M \approx 0.88]$

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(c) $M = 0.88$
 $C_{NA} = 0.08$
 $\alpha = 2.6^\circ$
 $\delta_{BL} = 0^\circ$

Orifice	Row					Row	
	1	2	3	4	5		
1	0.514	0.395	1.068	1.277	0.412	1	0.913
2	•343	•404	•264	•445	•183	2	•542
3	•290	•352	•257	•414	•053	3	•405
4	•240	•283	•176	•359	•033	4	•387
5	•174	•167	•155	•233	•094	5	•279
6	•158	•143	•164	•035	•151	6	•263
7	•140	•158	•177	•149	•041	7	•253
8	•131	•188	•278	•224	-	8	•227
9	•189	•283	•312	•243	-	9	•273
10	•097	•081	•053	•000	-	10	•201
11	•021	•051	•067	•027	-	11	•083
12	•091	•068	•027	•000	-	12	•091
13	-	•012	•000	•007	-	13	•000
14	-	•120	•034	-	•006	14	•087
15	-	•059	-	•067	-	15	-
16	-	•013	-	•007	-	16	-
17	-	•028	-	•013	-	17	-
18	-	•019	-	•007	-	18	-
19	-	•026	-	•020	-	19	-
c_n	0.112	0.116	0.133	0.110	0.033	c_n	0.181
c_m	.0000	.0014	.0049	.0242	.0175	c_m	.0038

$C_N' = 0.104$
 $C_m' = .0091$
 $C_b' = .041$

$x'_{cp} = 16.2$
 $y'_{cp} = 39.0$

$C_N' = 0.172$
 $C_m' = .0177$
 $C_b' = .070$

$x'_{cp} = 14.7$
 $y'_{cp} = 40.9$

(d) $M = 0.88$
 $C_{NA} = 0.15$
 $\alpha = 3.4^\circ$
 $\delta_{BL} = 0^\circ$

Orifice	Row					Row
	1	2	3	4	5	
1	0.913	1.278	1.403	1.480	1.051	1
2	•542	•598	•083	•175	•941	2
3	•405	•448	•522	•057	•124	3
4	•387	•354	•299	•520	-	4
5	•279	•282	•199	•319	•047	5
6	•263	•232	•242	•211	•203	6
7	•253	•247	•266	•237	•027	7
8	•227	•269	•399	•305	-	8
9	•273	•365	•400	•249	•134	9
10	•201	•142	•080	•040	•169	10
11	•083	•076	•061	•027	•061	11
12	•091	•061	•020	-	•020	12
13	•000	•007	•007	•095	-	13
14	•087	-	•027	-	•020	14
15	-	•073	-	•107	-	15
16	-	•027	-	•068	-	16
17	-	•028	•033	•000	-	17
18	-	•019	•000	•000	-	18
19	-	•026	•020	•028	•014	19
c_n	0.181	0.183	0.204	0.188	0.097	c_n
c_m	.0038	.0105	.0141	.0333	.0304	c_m

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(e) $M = 0.88$
 $C_{NA} = 0.21$
 $\alpha = 4.2^\circ$
 $\delta_{aL} = 0.3^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	1.077	1.458	1.574	1.623	1.231	1	1.222	1.535	1.681	1.730	1.330
2	.774	1.279	1.278	1.330	1.102	2	.906	1.370	1.439	1.201	
3	.604	.885	1.085	1.210	.774	3	.750	1.117	1.151	1.319	.876
4	.560	.494	.912	1.082	.124	4	.677	.774	1.005	1.175	.429
5	.409	.342	.258	.919	-.074	5	.494	.419	.480	1.009	.395
6	.358	.303	.284	.341	-.013	6	.461	.364	.394	.680	-.072
7	.330	.342	.335	.306	.020	7	.381	.350	.378	.543	-.041
8	.313	.357	.450	.411	-.013	8	.372	.409	.456	.543	-.066
9	.362	.444	.467	.295	-.113	9	.416	.502	.498	.415	-.119
10	.336	.377	.199	.013	-.134	10	.431	.469	.528	.027	-.100
11	.090	.050	.034	.014	.000	11	.165	.088	.027	.020	.014
12	.091	.047	.000	-.033	.007	12	.065	.047	-.067	-.079	-.020
13	-.018	-.034	-.040	-.088	-.013	13	-.036	-.054	-.100	-.128	.013
14	.073	-.034	-.012	-.086	.000	14	-.046	-.040	-.049	-.112	-.013
15	-.039	-.053	-.067	-.090	.007	15	-.052	-.046	-.080	-.103	.007
16	-.027	-.007	-.013	-.047	-.000	16	-.046	-.013	-.007	-.040	
17	-.028	-.027	-.000	-.013	-.000	17	-.028	-.020	-.013	-.033	
18	-.045	.000	-.007	-.020	-.000	18	-.032	-.007	-.013	-.014	
19	.020	.020	.021	.014	.020	19	.020	.020	.028	.000	

(f) $M = 0.88$
 $C_{NA} = 0.26$
 $\alpha = 4.6^\circ$
 $\delta_{aL} = 0.4^\circ$ down

Orifice	Row					Row
	1	2	3	4	5	
1	0.290	0.318	0.351	0.326	0.250	
c _n	.0057	.0136	.0196	.0418	.0371	c _m
c _m	0.252	x'cp = 16.2	y'cp = 41.9			c _b ' = .105
c _b '	.0223					c _n ' = 0.304
						c _m ' = .0246
						c _b ' = .129
						x'cp = 16.9
						y'cp = 42.6

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(g) $M = 0.88$ $\alpha = 5.1^\circ$
 $C_{NA} = 0.31$ $\delta_{aL} = 0.1^\circ$ down

(h) $M = 0.89$ $\alpha = 5.4^\circ$
 $C_{NA} = 0.35$ $\delta_{aL} = 0.4^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	1.365	1.626	1.750	1.781	1.341	1	1.511	1.675	1.808	1.804	1.394
2	.967	1.476	1.411	1.511	1.223	2	1.050	1.483	1.439	1.552	1.287
3	.846	1.174	1.234	1.383	.927	3	.913	1.282	1.324	1.401	.967
4	.751	1.139	1.054	1.233	.489	4	.835	1.207	1.166	1.308	.575
5	.565	.562	.797	1.066	.443	5	.665	.646	.930	1.117	.495
6	.525	.430	.510	.741	.418	6	.593	.528	.847	.803	.487
7	.463	.415	.469	.724	.000	7	.524	.478	.675	.795	.513
8	.428	.457	.520	.801	-.137	8	.482	.512	.604	.855	-.133
9	.460	.530	.540	.503	-.171	9	.533	.553	.517	.700	-.280
10	.477	.504	.548	.165	-.172	10	.506	.534	.545	.589	-.289
11	.327	.416	.415	-.007	-.107	11	.443	.507	.571	.622	-.176
12	.089	.007	-.007	-.099	-.111	12	.372	.419	-.026	-.063	-.026
13	-	.071	-.134	-.178	-.219	13	-.034	-.104	-.185	-.207	-.013
14	-	.020	-.087	-.092	-.222	14	-.025	-.162	-.178	-.317	-.006
15	-	.084	-.092	-.126	-.170	15	-.107	-.204	-.232	-.329	.026
16	-	.052	-.026	-.000	-.046	16	-.051	-.062	-.045	-.090	
17	-	.048	-.020	-.013	-.052	17	-.027	-.025	-.000	-.082	
18	-	.038	-.007	-.013	-.007	18	-.062	-.026	-.038	-.039	
19	-	.019	-.007	-.000	-.000	19	.013	.025	.040	.013	

Orifice	Row					Row
	1	2	3	4	5	
1	1.511	1.675	1.808	1.804	1.394	
2	1.050	1.483	1.439	1.552	1.287	
3	.913	1.282	1.324	1.401	.967	
4	.835	1.207	1.166	1.308	.575	
5	.665	.646	.930	1.117	.495	
6	.593	.528	.847	.803	.487	
7	.524	.478	.675	.795	.513	
8	.482	.512	.604	.855	-.133	
9	.533	.553	.517	.700	-.280	
10	.506	.534	.545	.589	-.289	
11	.443	.507	.571	.622	-.176	
12	.372	.419	-.026	-.063	-.026	
13	-.034	-.104	-.185	-.207	-.013	
14	-.025	-.162	-.178	-.317	-.006	
15	-.107	-.204	-.232	-.329	.026	
16	-.051	-.062	-.045	-.090		
17	-.027	-.025	-.000	-.082		
18	-.062	-.026	-.038	-.039		
19	.013	.025	.040	.013		

$c_n = 0.327$ 0.371 0.387 0.371 0.274
 $c_m = .0085$ $.0203$ $.0239$ $.0526$ $.0488$

$x'_{cp} = 16.5$
 $y'_{cp} = 42.3$

$c_n = 0.411$
 $c_m = .0221$
 $x'_{cp} = 19.6$
 $y'_{cp} = 43.1$

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(1) $M = 0.89$
 $c_{NA} = 0.45$
 $\alpha = 6.2^\circ$
 $\delta_{aL} = 0.4^\circ$ down

(1) $M = 0.89$
 $c_{NA} = 0.52$
 $\alpha = 6.8^\circ$
 $\delta_{aL} = 0.4^\circ$ down

Orifice	Row					Row				
	1	2	3	4	5	1	2	3	4	5
1	1.660	1.799	1.897	1.893	1.474	1	1.795	1.895	1.981	1.985
2	1.237	1.580	1.540	1.642	1.375	2	1.358	1.689	1.636	1.735
3	1.029	1.447	1.406	1.507	1.066	3	1.162	1.555	1.507	1.624
4	.991	1.289	1.265	1.408	.673	4	1.070	1.374	1.357	1.502
5	.797	.879	1.026	1.213	.609	5	.905	1.105	1.125	1.304
6	.683	.655	.994	.910	.549	6	.775	.791	1.067	.994
7	.647	.595	.901	.911	.570	7	.730	.695	1.002	.986
8	.581	.597	.825	.981	.380	8	.664	.656	1.032	1.049
9	.612	.648	.665	.833	-	9	.705	.713	.787	.916
10	.592	.604	.664	.838	-	10	.635	.674	.727	.921
11	.541	.590	.628	.502	-	11	.594	.626	.705	.796
12	.440	.496	.326	.120	-	12	.520	.560	.460	.202
13	.143	.188	-	.115	-	13	.132	.230	-.013	-.039
14	.019	-	.110	-	.160	14	.095	-.039	-.095	-.171
15	-	.088	-	.110	-	15	-	.025	-.165	-.199
16	-	.038	-	.050	-	16	-	.038	-.044	-.051
17	-	.033	-	.019	-	17	-	.013	-.013	-.057
18	-	.043	-	.026	-	18	-	.006	-.032	-.071
19	.006	.000	.000	.026	-	19	.006	.000	.020	-.007
c_n	0.473	0.512	0.559	0.553	0.452	c_n	0.541	0.582	0.642	0.633
c_m	-.0072	.0024	.0056	.0317	.0256	c_m	-.0186	-.0046	-.0062	.0174
c_b	0.500	0.014	.217			c_b	0.575	x'_{cp} = 22.9	x'_{cp} = 25.2	0.549
								y'_{cp} = 43.4	y'_{cp} = 43.7	.0010

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(k) $M = 0.89$ $\alpha = 8.4^\circ$
 $c_{NA} = 0.56$ $\alpha_{AL} = 0.3^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	2.019	2.060	2.154	2.157	1.738	1	2.136	2.179	2.296	2.182	1.711
2	1.570	1.862	1.797	1.894	1.638	2	1.696	2.003	1.899	1.933	1.569
3	1.361	1.762	1.698	1.764	1.299	3	1.525	1.885	1.805	1.795	1.270
4	1.322	1.556	1.513	1.653	0.940	4	1.485	1.722	1.653	1.693	0.849
5	1.135	1.354	1.279	1.498	0.723	5	1.289	1.485	1.366	1.438	0.706
6	0.973	1.078	1.254	1.159	0.560	6	1.144	1.346	1.349	1.096	0.600
7	0.936	0.911	1.210	1.143	0.446	7	1.031	1.066	1.248	0.946	0.545
8	0.845	0.876	1.203	0.946	0.221	8	0.990	1.016	1.265	0.940	0.330
9	0.877	0.872	0.857	0.633	0.127	9	0.993	0.991	0.847	0.726	0.242
10	0.757	0.833	0.619	0.562	-0.038	10	0.864	0.830	0.684	0.711	0.096
11	0.731	0.583	0.537	0.502	-0.052	11	0.767	0.476	0.591	0.634	0.059
12	0.489	0.437	0.255	0.328	-0.175	12	0.354	0.374	0.397	0.468	-0.026
13	0.051	0.052	0.159	0.161	-0.113	13	0.097	0.149	0.275	0.349	0.075
14	0.089	0.006	0.130	0.076	-0.122	14	0.115	0.065	0.255	0.235	0.026
15	-0.088	-0.235	-0.103	-0.144	0.144	15	-0.069	-0.121	-0.013	-0.007	0.066
16	-0.013	-0.044	0.025	-0.173	-0.082	16	-0.013	0.031	0.121	-0.013	
17	-0.007	0.057	0.076	-0.082	-0.117	17	-0.013	0.108	0.128	0.013	
18	-0.037	-0.006	0.101	0.013	0.112	18	-0.037	0.039	0.164	0.007	
19	0.025	0.032	0.112	0.117	-	19	0.031	0.025	0.106	0.137	

Orifice	Row					Row
	1	2	3	4	5	
1	2.136	2.179	2.296	2.182	1.711	
2	1.696	2.003	1.899	1.933	1.569	
3	1.525	1.885	1.805	1.795	1.270	
4	1.485	1.722	1.653	1.693	0.849	
5	1.289	1.485	1.366	1.438	0.706	
6	1.144	1.346	1.349	1.096	0.600	
7	1.031	1.066	1.248	0.946	0.545	
8	0.990	1.016	1.265	0.940	0.330	
9	0.993	0.991	0.847	0.726	0.242	
10	0.864	0.830	0.684	0.711	0.096	
11	0.767	0.476	0.591	0.634	0.059	
12	0.354	0.374	0.397	0.468	-0.026	
13	0.097	0.149	0.275	0.349	0.075	
14	0.115	0.065	0.255	0.235	0.026	
15	-0.069	-0.121	-0.013	-0.007	0.066	
16	-0.013	0.031	0.121	-0.013		
17	-0.013	0.108	0.128	0.013		
18	-0.037	0.039	0.164	0.007		
19	0.031	0.025	0.106	0.137		

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(l) $M = 0.89$ $\alpha = 9.5^\circ$
 $c_{NA} = 0.61$ $\alpha_{AL} = 0.3^\circ$ down

Orifice	Row					Row
	1	2	3	4	5	
1	2.136	2.179	2.296	2.182	1.711	
2	1.696	2.003	1.899	1.933	1.569	
3	1.525	1.885	1.805	1.795	1.270	
4	1.485	1.722	1.653	1.693	0.849	
5	1.289	1.485	1.366	1.438	0.706	
6	1.144	1.346	1.349	1.096	0.600	
7	1.031	1.066	1.248	0.946	0.545	
8	0.990	1.016	1.265	0.940	0.330	
9	0.993	0.991	0.847	0.726	0.242	
10	0.864	0.830	0.684	0.711	0.096	
11	0.767	0.476	0.591	0.634	0.059	
12	0.354	0.374	0.397	0.468	-0.026	
13	0.097	0.149	0.275	0.349	0.075	
14	0.115	0.065	0.255	0.235	0.026	
15	-0.069	-0.121	-0.013	-0.007	0.066	
16	-0.013	0.031	0.121	-0.013		
17	-0.013	0.108	0.128	0.013		
18	-0.037	0.039	0.164	0.007		
19	0.031	0.025	0.106	0.137		

$C_N' = 0.628$	$x'_{cp} = 23.9$	$x'_{cp} = 25.8$
$C_m' = .0668$	$y'_{cp} = 42.1$	$y'_{cp} = 42.1$
$C_b' = .265$		

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TABLE VII.- Continued.

 $[M \approx 0.88]$

(m) $M = 0.89$
 $C_{NA} = 0.64$
 $\alpha = 10.8^\circ$
 $\delta_{aL} = 0.4^\circ$ down

(n) $M = 0.89$
 $C_{NA} = 0.68$
 $\alpha = 11.8^\circ$
 $\delta_{aL} = 0.5^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	2.253	2.315	2.379	1.863	1.198	1	2.304	2.355	2.379	1.802	1.089
2	1.849	2.127	2.036	1.787	1.074	2	1.935	2.202	2.053	1.735	.983
3	1.706	2.001	1.887	1.624	.878	3	1.791	2.051	1.938	1.616	.802
4	1.622	1.889	1.734	1.604	.671	4	1.719	1.948	1.633	1.510	.608
5	1.468	1.616	1.312	1.220	.573	5	1.527	1.667	1.189	1.195	.573
6	1.273	1.530	1.230	.932	.539	6	1.349	1.496	1.123	.865	.495
7	1.185	1.313	.999	.806	.514	7	1.260	1.111	1.007	.806	.501
8	1.126	1.088	1.103	.815	.414	8	1.226	.805	.797	.798	.356
9	1.123	.697	.928	.664	.345	9	.996	.768	.824	.644	.326
10	.564	.607	.795	.662	.151	10	.520	.691	.788	.617	.097
11	.338	.532	.715	.623	.163	11	.431	.545	.715	.604	.157
12	.324	.434	.456	.489	.117	12	.380	.485	.456	.470	.117
13	.241	.260	.397	.408	.227	13	.328	.306	.429	.428	.214
14	.281	.201	.316	.280	.206	14	.332	.279	.328	.299	.226
15	.051	.051	.136	.073	.018	15	.126	.089	.187	.106	.270
16	.127	.175	.287	.097	.016	16	.146	.307	.319	.097	
17	.080	.268	.314	.159	.17	17	.133	.294	.340	.185	
18	.025	.175	.324	.202	.18	18	.081	.285	.343	.196	
19	.013	.000	.206	.236	.19	-	.025	.032	.266	.289	
c_n	0.733	0.809	0.842	0.687	0.526	c_n	0.771	0.827	0.814	0.667	0.495
c_m	-.0119	-.0165	-.0576	-.0376	-.0470	c_m	-.0193	-.0324	-.0619	-.0393	-.0465
C_N'	0.720	$x'_{cp} = 27.7$		$y'_{cp} = 40.6$		$C_N' = 0.718$	$x'_{cp} = 28.6$		$y'_{cp} = 39.7$		
C_m'	-.0195					$C_m' = -.0262$					
C_b'	.292					$C_b' = .285$					

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(o) $M = 0.89$
 $C_{NA} = 0.76$
 $\alpha = 12.5^\circ$
 $\delta_{aL} = 0.7^\circ$ down
 $(p) M = 0.88$
 $C_{NA} = 0.80$
 $\alpha = 14.4^\circ$
 $\delta_{aL} = 1.0^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.350	2.416	2.400	1.847	1.133	1	1.909	1.657	1.774	1.583	1.286
2	2.059	2.273	2.065	1.798	1.110	2	1.702	1.640	1.855	1.608	1.246
3	1.878	2.105	2.001	1.737	0.982	3	1.478	1.436	1.514	1.506	1.032
4	1.827	2.036	1.779	1.624	0.753	4	1.577	1.627	1.549	1.552	0.817
5	1.638	1.762	1.199	1.238	0.671	5	1.248	1.276	1.118	1.349	0.775
6	1.426	1.584	1.182	1.009	0.678	6	1.134	1.253	1.160	1.171	0.684
7	1.345	1.341	1.110	0.900	0.619	7	1.054	1.030	0.967	0.993	0.697
8	1.312	0.961	1.122	0.928	0.516	8	0.927	1.030	1.182	1.006	0.515
9	1.279	0.892	1.040	0.794	0.410	9	0.878	0.881	0.931	0.801	0.446
10	0.583	0.795	0.898	0.837	0.219	10	0.839	0.900	0.842	0.747	0.267
11	0.472	0.618	0.794	0.782	0.190	11	0.771	0.820	0.833	0.723	0.257
12	0.387	0.544	0.528	0.648	0.170	12	0.686	0.687	0.565	0.648	0.329
13	0.340	0.352	0.462	0.513	0.233	13	0.447	0.513	0.499	0.511	0.465
14	0.307	0.325	0.364	0.389	0.265	14	0.433	0.420	0.446	0.476	0.488
15	0.183	0.147	0.201	0.146	0.390	15	0.357	0.433	0.424	0.220	0.460
16	0.166	0.351	0.377	0.161	0.306	16	0.411	0.481	0.483	0.384	
17	0.140	0.365	0.366	0.343	0.366	17	0.417	0.478	0.479	0.515	
18	0.093	0.318	0.266	0.266	0.322	18	0.344	0.399	0.475	0.442	
19	-0.069	0.064	0.064	0.064	0.064	19	0.134	0.200	0.343	0.398	
c_n	0.834	0.910	0.893	0.793	0.600	c_n	0.827	0.866	0.874	0.818	0.689
c_m	-0.0232	-0.0452	-0.0742	-0.0692	-0.0678	c_m	-0.0832	-0.0957	-0.1017	-0.0891	-0.0886
c_b'	0.817	$x'_{cp} = 30.3$	$y'_{cp} = 41.2$			c_b'	0.803	$x'_{cp} = 35.5$			
		$c_m' = -0.0429$					$c_m' = -0.0844$				
		$c_b' = .357$					$c_b' = .356$				

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TABLE VII.- Concluded.

 $[M \approx 0.88]$

$$(q) \quad M = 0.88 \\ C_{NA} = 0.78 \\ \alpha = 15.2^\circ \\ \delta_{aL} = 0.4^\circ \text{ down}$$

Orifice	Row				
	1	2	3	4	5
1	1.590	1.419	1.446	1.409	1.215
2	1.507	1.356	1.324	1.363	1.200
3	1.356	1.296	1.236	1.323	0.976
4	1.395	1.280	1.178	1.262	0.782
5	1.185	1.127	1.047	1.137	0.699
6	1.020	1.075	1.021	1.013	0.629
7	1.024	0.965	0.927	0.928	0.594
8	0.872	0.947	0.968	0.922	0.465
9	0.861	0.884	0.836	0.738	0.415
10	0.823	0.871	0.793	0.704	0.183
11	0.747	0.767	0.765	0.645	0.212
12	0.657	0.656	0.528	0.560	0.277
13	0.414	0.482	0.514	0.467	0.447
14	0.408	0.434	0.435	0.329	0.458
15	0.397	0.421	0.445	0.148	0.448
16	0.439	0.508	0.498	0.314	
17	0.425	0.480	0.449	0.458	
18	0.377	0.446	0.464	0.424	
19	0.173	0.220	0.357	0.399	
C_n	0.779	0.795	0.765	0.717	0.631
C_m	-0.0895	-0.1036	-0.1059	-0.0780	-0.0772
C_b'	0.726		$x'_{cp} = 36.8$		
C_m'	-0.0855		$y'_{cp} = 41.3$		
C_d'	.300				

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TABLE VIII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
[$M \approx 0.90$]

(a) $M = 0.89$ $\alpha = 2.6^\circ$
 $c_{W_A} = 0.06$ $\delta_{a_L} = 0.2^\circ$ down

(b) $M = 0.89$ $\alpha = 3.1^\circ$
 $c_{W_A} = 0.09$ $\delta_{a_L} = 0.3^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	0.538	0.455	1.198	1.279	0.665
2	.369	.376	.285	.507	.273
3	.292	.326	.219	.401	.025
4	.289	.328	.184	.400	.068
5	.174	.192	.131	.270	.096
6	.200	.170	.180	.058	.205
7	.149	.134	.202	.158	.071
8	.166	.213	.346	.239	-.063
9	.226	.288	.309	.205	-.133
10	.209	.250	.290	.345	-.096
11	.119	.060	.058	-.020	-.104
12	.074	.045	-.032	-.032	-.000
13	-.011	-.026	-.013	-.122	-.000
14	.089	.148	.101	-.006	-.013
15	-.069	-.165	-.148	-.249	-.007
16	-.032	-.031	-.013	-.000	-.000
17	-.020	.044	.025	-.025	-.000
18	-.012	.013	-.000	-.006	-.000
19	.031	.032	-.059	-.026	-.000
c_n	0.140	0.145	0.171	0.157	0.058
c_m	-.0017	-.0028	.0011	.0153	.0192
c_b	$c_{W_A}^1 = 0.137$	$x'_{cp} = 21.6$			
	$c_m^1 = .0047$	$y'_{cp} = 40.8$			
	$c_b^1 = .056$				

Orifice	Row				
	1	2	3	4	5
1	0.821	1.129	1.360	1.340	0.969
2	.444	.482	.714	1.060	.807
3	.382	.407	.351	.657	.033
4	.340	.368	.225	.449	.025
5	.264	.250	.155	.301	.025
6	.232	.211	.212	.124	.180
7	.214	.191	.226	.216	.251
8	.181	.237	.394	.280	.069
9	.251	.313	.366	.217	.152
10	.269	.332	.358	.324	.115
11	.138	.078	.083	.045	.135
12	.080	.051	.032	.050	.000
13	-.006	-.013	-.032	-.115	-.031
14	.038	.115	.047	.038	.019
15	-.100	-.196	-.230	-.307	-.007
16	-.044	-.012	-.013	-.038	-.013
17	-.013	.032	.013	-.026	-.013
18	-.043	.026	.000	-.026	-.000
19	.050	.025	.039	.000	-.000
c_n	0.165	0.193	0.205	0.188	0.106
c_m	.0041	.0015	.0067	.0247	.0224
c_b	$c_{W_A}^1 = 0.175$				
	$c_m^1 = .0104$				
	$c_b^1 = .072$				
	$x'_{cp} = 19.1$				
	$y'_{cp} = 41.2$				

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TABLE VIII.- Continued.

 $[M \approx 0.90]$

(c) $M = 0.69$
 $C_{NA} = 0.16$
 $\alpha = 3.7^\circ$
 $Q_{BL} = 0.4^\circ$ down

(d) $M = 0.69$
 $C_{NA} = 0.19$
 $\alpha = 4.2^\circ$
 $Q_{BL} = 0.5^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.993	1.315	1.480	1.509	1.122	1	1.045	1.433	1.578	1.591	1.206
2	0.638	1.143	1.114	1.224	.984	2	.761	1.227	1.210	1.300	1.060
3	0.489	.547	.975	1.094	.657	3	.593	1.013	1.053	1.179	.769
4	0.460	.451	.489	.946	-	4	.570	.523	.874	1.058	.381
5	0.345	.307	.236	.601	-	5	.466	.355	.299	.904	.246
6	0.330	.261	.244	.198	.056	6	.345	.343	.291	.362	.025
7	0.304	.274	.292	.273	.218	7	.376	.297	.332	.337	.076
8	0.304	.312	.433	.355	-.044	8	.310	.378	.439	.412	-.012
9	0.336	.369	.422	.298	-.164	9	.393	.424	.445	.322	-.144
10	0.323	.401	.457	.329	-.089	10	.376	.424	.473	.340	-.063
11	0.248	.322	.216	.065	-.141	11	.299	.373	.416	.058	-.058
12	0.129	.045	-.070	-.037	.006	12	.220	.209	-.082	-.056	.025
13	-	.045	-.070	-.088	-.121	13	-	.068	-.121	-.151	-.140
14	-	.000	-.083	-.082	-.044	14	-	.019	-.019	-.093	-.062
15	-	.137	-.239	-.248	-.365	15	-	.142	-.244	-.247	-.304
16	-	.056	-.025	-.006	-.025	16	-	.050	-.031	-.000	-.050
17	-	.020	-.038	-.019	-.019	17	-	.039	-.038	-.006	-.012
18	-	.024	-.019	-.006	-.013	18	-	.030	-.006	-.038	-.013
19	-	.025	-.025	-.039	-.013	19	-	.019	-.038	-.046	-.013

c_n	0.223	0.243	0.260	0.260	0.178	c_n	0.261	0.291	0.319	0.299	0.231
c_m	.0053	.0128	.0131	.0311	.0316	c_m	.0039	.0109	.0160	.0371	.0352
c_b	0.232	0.174	0.099	0.099	0.099	c_b	0.278	0.188	0.119	0.27	0.27

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TABLE VIII.- Continued.

 $[M \approx 0.90]$

(e) $M = 0.90$
 $c_{NA} = 0.26$
 $\alpha = 4.8^\circ$
 $Q_{aL} = 0.1$ down

(f) $M = 0.90$
 $c_{NA} = 0.32$
 $\alpha = 5.3^\circ$
 $Q_{aL} = 0.0$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.278	1.565	1.667	1.664	1.312	1	1.422	1.587	1.754	1.750	1.366
2	.866	1.358	1.321	1.416	1.135	2	.956	1.419	1.410	1.476	1.207
3	.769	1.162	1.153	1.270	.846	3	.826	1.218	1.227	1.340	.917
4	.703	.948	1.008	1.177	.646	4	.782	1.147	1.076	1.243	.532
5	.552	.451	.603	1.011	.370	5	.613	.586	.850	1.077	.455
6	.448	.416	.482	.646	.348	6	.543	.513	.779	.704	
7	.374	.328	.395	.678	.190	7	.469	.425	.549	.745	.447
8	.443	.442	.471	.509	.618	-	.130	.453	.490	.570	.777
9	.443	.471	.493	.495	.395	-	.205	.491	.517	.507	.067
10	.416	.471	.526	.463	.138	10	.461	.529	.558	.571	-.195
11	.349	.406	.483	.483	.236	-	.229	.424	.427	.528	-.295
12	.309	.346	.346	.019	-.043	11	.424	.424	.382	.382	-.392
13	-.011	-.076	-.076	-.175	-.183	12	.338	.438	.355	.355	-.130
14	-.044	-.152	-.152	-.180	-.254	13	.241	.242	.226	.226	-.056
15	-.197	-.354	-.354	-.377	-.354	14	.030	-.006	-.153	-.153	-.000
16	-.062	-.049	-.049	-.062	-.107	15	-.259	-.445	-.480	-.480	-.422
17	-.019	-.006	-.006	-.025	-.068	16	-.067	-.090	-.116	-.116	-.147
18	-.054	-.013	-.013	-.025	-.076	17	-.006	-.006	-.049	-.049	-.127
19	.037	.019	.019	.032	.006	18	-.047	-.019	-.036	-.036	-.106
						19	.030	.018	.038	.038	.000
c_n	0.312	0.354	0.365	0.363	0.272						
c_m	.0052	.0153	.0211	.0472	.0446						

$c_N' = 0.332$
 $c_m' = .0250$
 $c_b' = .142$

$x'_{ep} = 17.5$
 $y'_{ep} = 42.6$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.422	1.587	1.754	1.750	1.366	1	1.419	1.410	1.476	1.207	
2	.956	.826	.826	.826	.826	2	1.218	1.227	1.340	1.340	
3	.846	.782	.782	.782	.782	3	1.147	1.076	1.243	1.243	
4	.613	.586	.586	.586	.586	4	1.076	1.077	1.077	1.077	
5	.543	.513	.513	.513	.513	5	.850	.850	.850	.850	
6	.469	.425	.425	.425	.425	6	.549	.549	.549	.549	
7	.469	.425	.425	.425	.425	7	.549	.549	.549	.549	
8	.453	.490	.490	.490	.490	8	.570	.570	.570	.570	
9	.491	.517	.517	.517	.517	9	.571	.571	.571	.571	
10	.461	.529	.529	.529	.529	10	.558	.558	.558	.558	
11	.424	.424	.424	.424	.424	11	.528	.528	.528	.528	
12	.338	.438	.438	.438	.438	12	.355	.355	.355	.355	
13	.241	.242	.242	.242	.242	13	.226	.226	.226	.226	
14	.030	-.006	-.006	-.006	-.006	14	.030	-.006	-.006	-.006	
15	-.259	-.445	-.445	-.445	-.445	15	-.259	-.445	-.445	-.445	
16	-.067	-.090	-.090	-.090	-.090	16	-.067	-.090	-.090	-.090	
17	-.006	-.006	-.006	-.006	-.006	17	-.006	-.006	-.006	-.006	
18	-.047	-.019	-.019	-.019	-.019	18	-.047	-.019	-.019	-.019	
19	.030	.018	.018	.018	.018	19	.030	.018	.018	.018	
c_n	0.369	0.424	0.452	0.459	0.340						
c_m	-.0017	.0059	.0114	.0381	.0398						

$c_N' = 0.402$
 $c_m' = .0161$
 $c_b' = .173$

$x'_{ep} = 21.0$
 $y'_{ep} = 42.9$

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TABLE VIII.-- Continued.

 $[M \approx 0.90]$

(g) $M = 0.91$
 $c_{N_A} = 0.36$
 $\alpha = 5.7^\circ$
 $\delta_{a_L} = 0.4^\circ$ down

(h) $M = 0.91$
 $c_{N_A} = 0.41$
 $\alpha = 6.2^\circ$
 $\delta_{a_L} = 0.4^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.553	1.686	1.801	1.805	1.402
2	1.080	1.478	1.407	1.528	1.269
3	.917	1.320	1.305	1.385	.984
4	.895	1.219	1.124	1.298	.572
5	.690	.712	.939	1.124	.515
6	.614	.579	.862	.797	.460
7	.549	.499	.804	.805	.496
8	.502	.540	.655	.871	.341
9	.553	.570	.580	.715	.180
10	.518	.552	.604	.622	-.194
11	.455	.501	.575	.450	-.294
12	.416	.469	.381	.274	-.447
13	.281	.275	.338	.134	-.083
14	.126	.126	.262	-.011	-.191
15	-.184	-.348	-.348	-.431	-.435
16	-.012	-.100	-.150	-.176	-.019
17	.025	-.006	-.066	-.126	-.006
18	.000	-.024	-.036	-.117	-.006
19	.053	.012	.050	-.006	-.006

Orifice	Row				
	1	2	3	4	5
1	1.673	1.746	1.841	1.876	1.473
2	1.194	1.533	1.489	1.592	1.323
3	1.020	1.415	1.369	1.480	1.040
4	.970	1.282	1.203	1.387	.654
5	.792	.831	1.001	1.209	.576
6	.701	.643	.978	.860	.507
7	.620	.570	.899	.876	.532
8	.565	.596	.819	.919	.383
9	.591	.619	.622	.775	.337
10	.559	.607	.646	.834	.061
11	.524	.529	.630	.543	-.129
12	.439	.511	.411	.304	-.337
13	.303	.294	.368	.201	-.118
14	.132	.287	.011	-.144	-.042
15	-.137	-.312	-.377	-.410	-.012
16	.006	-.082	-.150	-.188	
17	.056	-.006	-.036	-.084	
18	.058	-.024	-.036	-.086	
19	.053	.018	.037	.000	

c_n	0.438	0.485	0.505	0.507	0.417
c_m	-.0138	-.0065	.0031	.0265	.0226
c_N'	0.465				
c_m'	.0045				
c_b'	.200				
		$x'_{cp} = 24.0$			
		$y'_{cp} = 43.1$			
			$x'_{cp} = 25.5$		
			$y'_{cp} = 43.5$		
				$c_n' = 0.517$	
				$c_m' = -.0027$	
				$c_b' = .225$	

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TABLE VIII.-- Continued.
 $[M \approx 0.90]$

(1) $M = 0.90$ $\alpha = 6.9^\circ$
 $c_{NA} = 0.47$ $\delta_{aL} = 0.4^\circ$ down

(J) $M = 0.90$ $\alpha = 7.6^\circ$
 $c_{WA} = 0.52$ $\delta_{aL} = 0.4^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.801	1.837	1.937	1.956	1.544	1	1.888	1.928	2.032	2.051	1.615
2	1.292	1.660	1.563	1.680	1.433	2	1.430	1.740	1.661	1.736	1.512
3	1.146	1.502	1.465	1.560	1.127	3	1.249	1.613	1.560	1.647	1.223
4	1.069	1.371	1.299	1.468	.766	4	1.161	1.442	1.402	1.525	.878
5	.855	1.037	1.087	1.287	.655	5	.997	1.212	1.172	1.364	.715
6	.788	.780	1.056	.940	.601	6	.851	.908	1.141	1.066	.678
7	.691	.649	.971	.964	.594	7	.808	.760	1.083	1.027	.655
8	.659	.661	1.030	1.008	.425	8	.738	.766	1.116	1.089	.473
9	.679	.680	.745	.866	.373	9	.767	.747	.946	.915	.403
10	.623	.680	.712	.913	.073	10	.670	.753	.813	.979	.158
11	.587	.569	.691	.814	-.012	11	.655	.649	.739	.753	.037
12	.480	.542	.465	.418	-.159	12	.533	.572	.441	.322	-.061
13	.303	.373	.422	.195	-.083	13	.216	.428	.350	.061	-.136
14	.132	.244	.011	-.078	.048	14	.114	.159	.022	.006	-.139
15	-.125	-.276	-.316	-.373	.043	15	-.089	-.234	-.273	-.224	-.006
16	.018	-.112	-.192	-.261	-.042	16	-.006	-.171	-.198	-.236	-.060
17	.113	.030	-.030	-.018	-.049	17	.125	-.012	-.048	-.012	-.012
18	.093	-.006	-.018	-.075	.012	18	.111	-.018	.006	-.012	-.056
19	.077	.036	-.036	-.006	-.049	19	.101	.042	.113	.056	
c_n	0.544	0.587	0.628	0.646	0.562	c_n	0.593	0.637	0.690	0.684	0.612
c_m	-.0240	-.0119	-.0073	-.0055	-.0114	c_m	-.0244	-.0096	-.0107	-.0044	-.0131
c_b	0.580	-.0084	-.254								
						c_N'	0.627	x'_{cp}	26.4		
						c_m'	-.0079	y'_{cp}	43.9		
						c_b'	.274				

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TABLE VIII.-- Continued.
 $[M \approx 0.90]$

$$(k) M = 0.90 \quad \alpha = 8.5^\circ \quad \alpha_{aL} = 0.4^\circ \text{ down}$$

$$(l) M = 0.90 \quad \alpha = 9.4^\circ \quad \alpha_{aL} = 1.1^\circ \text{ down}$$

$$c_{NA} = 0.55 \quad c_{NA} = 0.63$$

Orifice	Row				
	1	2	3	4	5
1	2.016	2.026	2.127	2.146	1.717
2	1.511	1.842	1.751	1.856	1.567
3	1.336	1.716	1.640	1.765	1.302
4	1.285	1.562	1.497	1.630	0.973
5	1.099	1.314	1.250	1.457	0.812
6	0.969	1.061	1.234	1.145	0.642
7	0.887	0.863	1.194	1.153	0.490
8	0.863	0.870	1.202	1.170	0.239
9	0.855	0.856	1.068	0.606	0.186
10	0.723	0.838	0.628	0.556	0.012
11	0.718	0.723	0.539	0.463	0.031
12	0.562	0.517	0.278	0.328	-0.061
13	0.178	0.300	0.187	0.189	-0.059
14	0.102	0.122	0.129	0.114	-0.042
15	-0.048	-0.204	-0.043	-0.081	-0.062
16	-0.048	-0.224	-0.030	-0.121	0.16
17	0.031	-0.084	-0.030	-0.078	0.17
18	0.041	-0.049	-0.012	-0.086	0.18
19	0.065	0.054	-0.063	0.012	0.19

Orifice	Row				
	1	2	3	4	5
1	2.089	2.164	2.232	2.266	1.821
2	1.626	1.962	1.867	1.946	1.693
3	1.479	1.867	1.776	1.862	1.398
4	1.402	1.698	1.601	1.736	1.020
5	1.264	1.442	1.344	1.582	0.837
6	1.088	1.295	1.305	1.248	0.661
7	1.013	1.030	1.298	1.201	0.588
8	0.974	0.984	1.296	1.106	0.299
9	0.988	0.966	0.989	0.752	0.247
10	0.828	0.893	0.742	0.671	0.103
11	0.805	0.678	0.624	0.568	0.098
12	0.604	0.518	0.375	0.418	0.031
13	0.195	0.312	0.247	0.274	0.113
14	0.150	0.128	0.213	0.210	0.085
15	-0.018	-0.096	0.030	-0.044	0.037
16	0.000	-0.118	0.120	-0.036	
17	-0.013	0.018	0.054	-0.012	
18	0.017	0.000	0.084	0.018	
19	0.053	0.036	0.000	0.049	

c_n	0.640	0.679	0.703	0.655	0.574
c_m	-0.0195	-0.0014	-0.0094	.0140	.0109
$c_{\bar{m}}$					
c_b					
$c_{\bar{b}}$					

c_n	0.715	0.760	0.785	0.738	0.658
c_m					
$c_{\bar{m}}$					
c_b					
$c_{\bar{b}}$					

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TABLE VIII.- Continued.
 $[M \approx 0.90]$

(m) $M = 0.90$ $\alpha = 10.9^\circ$
 $C_{NA} = 0.68$ $\delta_{aL} = 1.0^\circ$ down

(n) $M = 0.90$ $\alpha = 12.3^\circ$
 $C_{NA} = 0.73$ $\delta_{aL} = 0.6^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.214	2.268	2.325	2.240	1.740	1	2.359	2.384	2.390	1.962	1.476
2	1.779	2.055	1.996	1.984	1.566	2	1.980	2.214	2.093	1.862	1.215
3	1.652	1.992	1.878	1.852	1.333	3	1.816	2.094	1.956	1.762	1.007
4	1.591	1.808	1.726	1.790	.937	4	1.753	1.974	1.834	1.723	.736
5	1.428	1.559	1.428	1.558	.830	5	1.581	1.683	1.415	1.382	.684
6	1.213	1.487	1.405	1.200	.701	6	1.381	1.611	1.392	1.026	.617
7	1.169	1.259	1.353	1.034	.624	7	1.312	1.436	1.155	.955	.617
8	1.114	1.136	1.318	1.016	.425	8	1.257	1.039	1.163	.894	.458
9	1.107	1.068	1.001	.812	.355	9	1.242	.813	.977	.751	.424
10	.944	.880	.843	.780	.206	10	.687	.703	.909	.767	.208
11	.880	.649	.733	.703	.233	11	.440	.608	.787	.721	.247
12	.615	.493	.465	.531	.171	12	.354	.539	.578	.601	.000
13	.243	.318	.374	.439	.249	13	.305	.376	.468	.522	.000
14	.216	.220	.297	.341	.230	14	.375	.332	.418	.392	.000
15	.018	.024	.024	.115	.131	15	.179	.163	.245	.175	.000
16	-.018	-.012	-.012	.210	.073	16	.199	.291	.375	.183	
17	.019	.150	.175	.174	.174	17	.151	.357	.334	.235	
18	-.035	.036	.116	.233	.153	18	.100	.331	.373	.260	
19	-.036	-.024	.137	.160	-.19	19	-.042	.115	.258	.249	
c _n	0.796	0.839	0.874	0.804	0.703	c _n	0.829	0.899	0.930	0.792	0.584
c _m	-.0284	-.0214	-.0509	-.0373	-.0446	c _m	-.0290	-.0434	-.0777	-.0579	-.0324
$C_N^I = 0.788$ $C_m^I = -0.0259$ $C_b^I = .333$											
$x'_{cp} = 28.3$ $y'_{cp} = 42.2$											
$x'_{cp} = 29.8$ $y'_{cp} = 40.6$											
$C_N^I = 0.804$ $C_m^I = -.0382$ $C_b^I = .327$											

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TABLE VIII.-- Concluded.
 $[M \approx 0.90]$

(o) $M = 0.90$
 $c_{NA} = 0.79$
 $\alpha = 13.3^\circ$
 $\delta_{aL} = 0.4^\circ$ up
 $M \approx 0.90$

Orifice	Row				
	1	2	3	4	5
1	2.420	2.451	2.354	1.913	1.244
2	2.103	2.281	2.110	1.802	1.150
3	1.950	2.184	2.028	1.807	0.971
4	1.910	2.063	1.848	1.760	0.769
5	1.704	1.792	1.472	1.391	0.704
6	1.502	1.631	1.424	1.111	0.661
7	1.392	1.380	1.217	1.014	0.637
8	1.360	1.066	1.193	0.995	0.482
9	1.340	0.922	1.039	0.834	0.429
10	0.630	0.829	0.951	0.850	0.173
11	0.522	0.661	0.646	0.786	0.213
12	0.436	0.577	0.591	0.645	0.150
13	0.353	0.411	0.498	0.578	0.236
14	0.361	0.336	0.400	0.366	0.229
15	0.242	0.184	0.211	0.203	0.234
16	0.213	0.360	0.361	0.173	
17	0.210	0.367	0.332	0.226	
18	0.148	0.335	0.353	0.238	
19	- 0.042	0.116	0.255	0.302	
c_n	0.887	0.948	0.946	0.821	0.607
c_m	-0.0843	-0.0513	-0.0785	-0.0633	-0.0595
c_b	$c_N' = 0.843$ $c_m' = -0.0512$ $c_b' = 0.341$		$x'_c p = 31.1$ $y'_c p = 40.4$		

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TABLE IX
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$[M \approx 0.92]$

(a) $M = 0.92$
 $c_{NA} = 0.02$
 $\delta_{aL} = 1.7^\circ$
 $\delta_{aL} = 0.9^\circ$ up

(b) $M = 0.92$
 $c_{NA} = 0.06$
 $\alpha = 2.2^\circ$
 $\delta_{aL} = 1.1^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.170	0.215	0.363	0.354	0.128
2	0.165	0.209	0.150	0.293	0.151
3	0.104	0.177	0.089	0.330	0.024
4	0.126	0.154	0.072	0.205	-0.012
5	0.072	0.040	0.008	0.118	0.043
6	0.048	0.041	0.055	-0.040	0.006
7	0.048	0.064	0.073	-0.080	0.044
8	0.024	0.016	0.016	0.198	0.164
9	0.019	0.049	0.043	-0.006	-0.098
10	0.071	0.080	0.115	0.104	-0.308
11	0.032	0.069	0.166	0.213	-0.405
12	0.107	0.105	0.055	0.127	-0.162
13	0.049	0.056	0.056	0.049	-0.068
14	0.281	0.236	0.222	-0.170	-0.018
15	-0.229	-0.330	-0.321	-0.467	-0.006
16	-0.079	-0.114	-0.116	-0.158	-0.117
17	-0.070	-0.006	-0.018	-0.061	-0.061
18	-0.024	-0.025	-0.025	-0.030	-0.031
19	-0.006	0.024	0.024	0.057	-0.006

Orifice	Row				
	1	2	3	4	5
1	0.323	0.291	0.338	0.474	0.136
2	0.206	0.281	0.199	0.333	0.183
3	0.193	0.249	0.145	0.402	0.048
4	0.143	0.226	0.104	0.286	0.024
5	0.111	0.096	0.063	0.142	0.049
6	0.096	0.082	0.102	.000	0.042
7	0.088	0.112	0.105	-0.032	0.056
8	0.064	0.057	0.230	0.229	0.170
9	0.077	0.080	0.093	0.025	-0.018
10	0.136	0.166	0.231	0.153	-0.412
11	0.101	0.156	0.221	0.282	-0.486
12	0.119	0.119	0.105	0.186	-0.267
13	0.093	0.068	0.068	0.037	-0.060
14	0.14	0.293	0.248	0.244	-0.267
15	-0.253	-0.335	-0.382	-0.530	-0.019
16	-0.127	-0.127	-0.161	-0.219	-0.172
17	-0.057	-0.057	-0.012	-0.049	-0.103
18	-0.053	-0.019	-0.036	-0.037	-0.025
19	-0.024	0.012	0.051	-0.025	-0.025

$c_n = 0.055$	0.046	0.072	0.044	-0.019	$c_n = 0.084$	0.089	0.102	0.071	-0.014
$c_m = -0.036$	-0.019	.0001	.0175	.0259	$c_m = -0.033$.0001	-.0019	.0205	.0297
$c_b = 0.042$	$x'_{ep} = 12.1$	$y'_{ep} = 34.6$			$c_b = 0.072$	$x'_{cp} = 14.4$	$y'_{cp} = 34.9$		

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TABLE IX.- Continued.

 $[M \approx 0.92]$

(c) $M = 0.92$
 $c_{NA} = 0.10$
 $\alpha = 2.6^\circ$
 $c_{BL} = 1.1^\circ$ up

(d) $M = 0.92$
 $c_{NA} = 0.16$
 $\alpha = 3.4^\circ$
 $c_{BL} = 1.0^\circ$ up

Office	Row				
	1	2	3	4	5
1	0.467	0.374	1.018	1.184	0.613
2	.312	.367	.298	.453	.317
3	.280	.304	.177	.392	.024
4	.226	.206	.192	.334	.030
5	.151	.160	.094	.227	.049
6	.151	.130	.149	.040	.066
7	.103	.168	.145	.104	.130
8	.143	.106	.307	.245	.139
9	.121	.117	.154	.055	.036
10	.212	.251	.308	.342	-
11	.151	.236	.275	.305	-
12	.183	.123	.122	.187	-
13	.115	.074	.067	.086	-
14	.298	.265	.226	-	.024
15	-	.258	-	.328	-
16	-	.169	-	.238	-
17	-	.070	-	.036	-
18	-	.047	-	.037	-
19	-	.006	-	.024	-

c_n	0.128	0.124	0.158	0.132	0.029
c_m	- .0048	.0012	.0043	.0251	.0347

(d) $M = 0.92$
 $c_{NA} = 0.16$
 $\alpha = 3.4^\circ$
 $c_{BL} = 1.0^\circ$ up

Office	Row				
	1	2	3	4	5
1	0.859	1.166	1.287	1.380	0.984
2	.508	.637	.1022	.104	.892
3	.406	.366	.005	.544	-
4	.359	.393	.732	.018	-
5	.277	.263	.156	.328	-
6	.246	.211	.203	.119	.042
7	.198	.247	.217	.183	.296
8	.221	.179	.354	.301	.109
9	.215	.281	.301	.140	.055
10	.288	.318	.374	.323	.189
11	.214	.231	.317	.317	.365
12	.230	.202	.152	.192	.475
13	.174	.129	.103	.086	.179
14	.339	.314	.215	.127	.037
15	-	.275	.357	.392	.012
16	-	.241	.344	.381	.214
17	-	.063	.067	.079	.139
18	-	.076	.043	.048	.093
19	-	.018	.012	.031	.025

$x'_{cp} = 16.7$
 $y'_{cp} = 39.5$

$c_N' = 0.198$
 $c_m' = .0136$
 $c_D' = .084$

$x'_{cp} = 18.1$
 $y'_{cp} = 42.4$

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TABLE IX.--Continued.

 $[M \approx 0.92]$

(e) $M = 0.92$
 $C_{NA} = 0.20$ $\alpha = 3.9^\circ$
 $\delta_{aL} = 0.6^\circ$ up

(f) $M = 0.92$
 $C_{NA} = 0.24$ $\alpha = 4.3^\circ$
 $\delta_{aL} = 0.5^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.922	1.305	1.402	1.470	1.093	1	0.984	1.333	1.446	1.522	1.169
2	0.649	1.089	1.143	1.230	1.000	2	0.752	1.197	1.198	1.283	1.022
3	0.513	0.702	0.929	1.090	0.697	3	0.606	0.929	0.983	1.067	0.759
4	0.463	0.669	0.806	0.934	0.288	4	0.545	0.603	0.867	0.988	0.364
5	0.392	0.308	0.225	0.828	0.109	5	0.414	0.371	0.332	0.864	0.284
6	0.283	0.273	0.263	0.276	0.024	6	0.369	0.320	0.317	0.464	0.147
7	0.282	0.308	0.246	0.244	0.092	7	0.281	0.323	0.285	0.354	0.104
8	0.266	0.233	0.397	0.370	0.096	8	0.320	0.289	0.443	0.434	0.066
9	0.289	0.339	0.353	0.200	0.078	9	0.357	0.393	0.395	0.278	0.066
10	0.326	0.363	0.424	0.320	-	10	0.336	0.411	0.458	0.391	-
11	0.237	0.352	0.411	0.277	-	11	0.280	0.363	0.446	0.283	-
12	0.257	0.243	0.223	0.185	-	12	0.268	0.309	0.259	0.190	-
13	0.205	0.165	0.138	0.097	-	13	0.242	0.152	0.168	0.109	-
14	0.336	0.341	0.235	-	0.06 -	14	0.311	0.352	0.246	0.018	-
15	-	0.225	0.276	-	0.333 -	15	-	0.177	0.245	-	0.066
16	-	0.251	0.423	-	0.413 -	16	-	0.238	0.416	-	0.365
17	-	0.075	0.096	-	0.120 -	17	-	0.062	0.126	-	0.235
18	-	0.070	0.073	-	0.083 -	18	-	0.035	0.073	-	0.137
19	-	0.024	0.012	-	0.037 -	19	-	0.030	0.012	-	0.092
c_n	0.238	0.257	0.306	0.287	0.189	c_n	0.274	0.299	0.338	0.333	0.231
c_m	-0.0033	.0096	.0122	.0293	.0429	c_m	-0.0060	.0074	.0102	.0275	.0221
$C_N^I = 0.254$ $C_m^I = .0154$ $C_b^I = .109$											
$x_{op}^I = 18.9$ $y_{op}^I = 42.9$											
$C_N^I = 0.293$ $C_m^I = .0134$ $C_b^I = .126$											
$x_{op}^I = 20.4$ $y_{op}^I = 43.1$											

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TABLE IX.- Continued.

 $[M \approx 0.92]$

(g) $M = 0.92$
 $c_{NA} = 0.30$
 $\delta_{AL} = 0.4^{\circ}$ up
 $\alpha = 4.9^{\circ}$

(h) $M = 0.92$
 $c_{NA} = 0.36$
 $\delta_{AL} = 0.2^{\circ}$ up
 $\alpha = 5.4^{\circ}$

Orifice	Row					Row
	1	2	3	4	5	
1	1.180	1.473	1.562	1.590	1.229	1
2	.840	1.273	1.252	1.376	1.098	2
3	.731	1.045	1.100	1.235	.828	3
4	.667	.903	.968	1.098	.439	4
5	.515	.449	.640	.932	.349	5
6	.439	.392	.455	.620	.363	6
7	.406	.401	.396	.604	.341	7
8	.367	.336	.481	.641	.083	8
9	.413	.440	.425	.379	.030	9
10	.411	.453	.505	.457	-.030	10
11	.360	.424	.500	.350	-.091	11
12	.297	.375	.330	.225	-.329	12
13	.258	.188	.246	.121	-.377	13
14	.335	.370	.290	.077	-.108	14
15	-.165	-.191	-.278	-.297	-.006	15
16	-.208	-.386	-.388	-.331	16	-.178
17	-.075	-.149	-.210	-.149	17	-.161
18	-.029	-.085	-.136	-.079	18	-.040
19	.053	.012	.012	.025	.031	19

Orifice	Row					Row
	1	2	3	4	5	
1	1.360	1.598	1.670	1.697	1.305	1
2	.959	1.373	1.348	1.437	1.174	2
3	.824	1.161	1.193	1.351	.906	3
4	.773	1.123	1.069	1.177	.509	4
5	.631	.597	.847	1.038	.421	5
6	.532	.463	.770	.697	.415	6
7	.475	.495	.553	.690	.444	7
8	.428	.416	.565	.801	.267	8
9	.487	.500	.521	.637	.072	9
10	.468	.512	.540	.534	.006	10
11	.440	.463	.541	.404	-.006	11
12	.331	.429	.438	.266	-.200	12
13	.306	.219	.305	.151	-.465	13
14	.382	.375	.345	.148	-.289	14
15	-.136	-.167	-.205	-.241	-.031	15
16	16	17	18	19	20	16
17	17	16	21	31	39	17
18	18	16	22	31	385	18
19	19	16	9	6	79	19

c_m	0.331	0.361	0.398	0.403	0.301	c_m	0.391	0.424	0.467	0.477	0.365
c_m	-.0097	.0045	.0063	.0247	.0370	c_m	-.0136	.0025	.0029	.0183	.0295

$x'_{op} = 22.2$
 $y'_{op} = 43.4$

$x'_{op} = 23.5$
 $y'_{op} = 43.6$

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TABLE IX. - Continued.

 $[M \approx 0.92]$

$$(1) \quad M = 0.93 \quad \alpha = 6.0^\circ \quad \delta_{aL} = 0.1^\circ \text{ up}$$

$$(J) \quad M = 0.93 \quad \alpha = 6.7^\circ \quad \delta_{aL} = 0.3^\circ \text{ up}$$

$$C_{NA} = 0.41 \quad C_{NA} = 0.46$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.502	1.636	1.741	1.776	1.368	1	1.615	1.712	1.812	1.854	1.449
2	1.032	1.444	1.421	1.509	1.275	2	1.143	1.511	1.497	1.590	1.356
3	0.910	1.263	1.256	1.391	0.993	3	1.004	1.369	1.363	1.472	1.054
4	0.856	1.210	1.147	1.241	0.561	4	0.938	1.262	1.231	1.341	0.644
5	0.693	0.684	0.917	1.100	0.493	5	0.757	0.873	0.985	1.152	0.561
6	0.571	0.542	0.871	0.760	0.474	6	0.659	0.657	0.970	0.839	0.516
7	0.537	0.542	0.750	0.752	0.474	7	0.625	0.600	0.869	0.824	0.536
8	0.498	0.472	0.681	0.873	0.368	8	0.548	0.571	0.914	0.929	0.400
9	0.530	0.542	0.557	0.703	0.280	9	0.606	0.609	0.654	0.781	0.355
10	0.491	0.548	0.599	0.714	0.090	10	0.545	0.621	0.647	0.833	0.233
11	0.495	0.514	0.577	0.447	0.079	11	0.540	0.549	0.638	0.686	0.248
12	0.343	0.465	0.384	0.308	- 0.085	12	0.380	0.503	0.446	0.370	0.060
13	0.338	0.243	0.347	0.181	- 0.400	13	0.367	0.337	0.392	0.222	- 0.233
14	0.346	0.382	0.389	0.190	- 0.343	14	0.331	0.396	0.441	0.212	- 0.179
15	- 0.094	- 0.155	- 0.163	- 0.185	- 0.092	15	- 0.076	- 0.059	- 0.114	- 0.104	- 0.163
16	- 0.148	- 0.310	- 0.304	- 0.355	-	16	- 0.094	- 0.249	- 0.218	- 0.298	-
17	- 0.192	- 0.256	- 0.329	- 0.267	-	17	- 0.129	- 0.213	- 0.291	- 0.359	-
18	- 0.121	- 0.175	- 0.284	- 0.110	-	18	- 0.132	- 0.240	- 0.288	- 0.223	-
19	0.071	0.060	0.056	- 0.006	-	19	0.099	- 0.006	0.018	- 0.006	-
c_n	0.421	0.461	0.517	0.537	0.440	c_n	0.471	0.520	0.593	0.598	0.517
c_m	- 0.0109	0.0021	.0013	.0109	.0125	c_m	- 0.0147	- 0.0034	- 0.0160	.0041	- 0.0100
C_{NA}'	0.465	$x'_{cp} = 24.4$				$C_{NA}' = 0.516$					
C_m'	0.026	$y'_{cp} = 44.3$				$C_m' = -0.085$					
C_b'	.206					$C_b' = .232$					
										$x'_{cp} = 26.7$	
										$y'_{cp} = 44.9$	

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TABLE IX.- Continued.

 $[M \approx 0.92]$

$$(k) M = 0.93 \quad \alpha = 7.1^\circ \quad \delta_{a_L} = 0.4^\circ \text{ up}$$

$$(l) M = 0.93 \quad \alpha = 7.7^\circ \quad \delta_{a_L} = 0.4^\circ \text{ up}$$

Orifice Row

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.752	1.811	1.893	1.920	1.493	1	1.815	1.900	1.956	1.998	1.562
2	1.260	1.584	1.550	1.665	1.377	2	1.372	1.646	1.623	1.697	1.453
3	1.110	1.444	1.415	1.531	1.091	3	1.203	1.529	1.469	1.624	1.161
4	1.025	1.314	1.275	1.386	0.723	4	1.107	1.385	1.361	1.442	0.804
5	•840	1.042	1.044	1.233	•601	5	•932	1.158	1.105	1.317	•672
6	•719	•734	1.029	•892	•590	6	•797	•868	1.105	•961	•648
7	•686	•684	•938	•915	•559	7	•747	•739	1.000	•969	•631
8	•624	•609	•996	•974	•435	8	•701	•696	1.080	1.053	•470
9	•661	•656	•743	•839	•390	9	•729	•733	•911	•892	•449
10	•578	•662	•687	•867	•250	10	•641	•721	•781	•938	•262
11	•613	•604	•684	•788	•295	11	•637	•654	•738	•848	•343
12	•425	•514	•481	•475	•126	12	•471	•544	•522	•633	•216
13	•409	•384	•426	•275	•163	13	•441	•438	•474	•413	•064
14	•313	•407	•462	•217	•113	14	•307	•425	•490	•206	•065
15	-	•023	-	•024	-	15	-	•006	•047	-	•073
16	-	•065	-	•208	-	16	-	•029	-	•124	-
17	-	•086	-	•159	-	17	-	•043	-	•118	-
18	-	•109	-	•209	-	18	-	•046	-	•167	-
19	-	•087	-	•047	-	19	-	•000	-	•083	-
c_n	0.520	0.566	0.638	0.644	0.559	c_m	0.571	0.625	0.703	0.708	0.624
c_m	-0.0193	-0.0066	-0.0181	-0.0023	-0.0206	c_b	-0.0259	-0.0164	-0.0288	-0.0147	-0.0362

$$(l) M = 0.93 \quad \alpha = 7.7^\circ \quad \delta_{a_L} = 0.4^\circ \text{ up}$$

$$(k) M = 0.93 \quad \alpha = 7.1^\circ \quad \delta_{a_L} = 0.4^\circ \text{ up}$$

$$x'_{cp} = 26.9 \quad y'_{cp} = 44.3$$

$$x'_{cp} = 28.3 \quad y'_{cp} = 44.4$$

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TABLE IX.- Continued.

 $[M \approx 0.92]$
 $(n) M = 0.93$
 $C_{NA} = 0.60$
 $\alpha = 8.2^\circ$
 $\delta_{aL} = 0.6^\circ$ up

 $(n) M = 0.93$
 $C_{NA} = 0.66$
 $\alpha = 9.1^\circ$
 $\delta_{aL} = 0.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.902	1.953	2.011	2.045	1.640	1	2.042	2.079	2.151	2.162	1.771
2	1.444	1.732	1.679	1.792	1.515	2	1.540	1.864	1.808	1.902	1.639
3	1.258	1.584	1.556	1.687	1.232	3	1.413	1.755	1.665	1.796	1.364
4	1.180	1.510	1.431	1.521	0.891	4	1.327	1.643	1.548	1.672	1.019
5	1.033	1.244	1.167	1.386	0.720	5	1.171	1.369	1.296	1.492	0.857
6	0.890	0.947	1.082	1.039	0.706	6	0.975	1.216	1.311	1.194	0.793
7	0.801	0.809	1.079	1.024	0.673	7	0.932	0.980	1.212	1.171	0.776
8	0.786	0.760	1.134	1.125	0.511	8	0.917	0.871	1.257	1.236	0.576
9	0.797	0.781	1.007	0.952	0.461	9	0.889	0.888	1.127	1.071	0.484
10	0.675	0.775	0.840	0.991	0.310	10	0.778	0.859	1.051	0.932	0.196
11	0.686	0.688	0.774	0.927	0.344	11	0.735	0.777	0.750	0.612	0.193
12	0.506	0.592	0.564	0.692	0.313	12	0.598	0.675	0.392	0.434	0.120
13	0.478	0.481	0.509	0.545	-	13	0.419	0.517	0.314	0.263	0.041
14	0.242	0.461	0.534	0.206	0.012	14	0.236	0.461	0.231	0.182	0.113
15	0.012	0.089	-	0.072	-	15	0.029	0.100	0.101	-	0.037
16	-	0.006	-	0.127	-	16	0.088	-	0.093	0.112	-
17	-	0.012	-	0.089	-	17	0.104	-	0.030	0.107	-
18	-	0.011	-	0.108	-	18	0.074	-	0.054	0.076	-
19	-	0.017	-	0.124	-	19	0.000	-	0.118	0.000	0.018
c_n	0.616	0.681	0.754	0.763	0.672	c_n	0.698	0.773	0.827	0.783	0.798
c_m	-0.0294	-0.0251	-0.0379	-0.0230	-0.0139	c_m	-0.0397	-0.0332	-0.0440	-0.0559	-0.0412
c_b'	0.680	0.745	$x'_{cp} = 29.1$								
c_a'	-0.279	-0.300	$y'_{cp} = 44.3$								
c_d'	0.301	0.324									

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.042	2.079	2.151	2.162	1.771	2	1.540	1.864	1.808	1.902	1.639
2	1.540	1.864	1.808	1.902	1.639	3	1.413	1.755	1.665	1.796	1.364
3	1.413	1.755	1.665	1.796	1.364	4	1.327	1.643	1.548	1.672	1.019
4	1.327	1.643	1.548	1.672	1.019	5	1.171	1.369	1.296	1.492	0.857
5	1.171	1.369	1.296	1.492	0.857	6	0.975	1.216	1.311	1.194	0.793
6	0.975	1.216	1.311	1.194	0.793	7	0.932	0.980	1.212	1.171	0.776
7	0.932	0.980	1.212	1.171	0.776	8	0.917	0.871	1.257	1.236	0.576
8	0.917	0.871	1.257	1.236	0.576	9	0.889	0.888	1.127	1.071	0.484
9	0.889	0.888	1.127	1.071	0.484	10	0.778	0.859	1.051	0.932	0.196
10	0.778	0.859	1.051	0.932	0.196	11	0.735	0.777	0.750	0.612	0.193
11	0.735	0.777	0.750	0.612	0.193	12	0.598	0.675	0.392	0.434	0.120
12	0.598	0.675	0.392	0.434	0.120	13	0.419	0.517	0.314	0.263	0.041
13	0.419	0.517	0.314	0.263	0.041	14	0.236	0.461	0.231	0.182	0.113
14	0.236	0.461	0.231	0.182	0.113	15	0.029	0.100	0.101	-	0.037
15	0.029	0.100	0.101	-	0.037	16	0.088	-	0.093	0.112	-
16	0.088	-	0.093	0.112	-	17	0.104	-	0.030	0.107	-
17	0.104	-	0.030	0.107	-	18	0.074	-	0.054	0.076	-
18	0.074	-	0.054	0.076	-	19	0.000	-	0.118	0.000	0.018
c_n	0.698	0.773	0.827	0.783	0.798						
c_m	-0.0397	-0.0332	-0.0440	-0.0559	-0.0412						
c_b'	0.745										
c_a'	-0.300										
c_d'	0.324										

$x'_{cp} = 29.0$
 $y'_{cp} = 43.4$

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TABLE IX.- Continued.

 $[M \approx 0.92]$

(o) $M = 0.93$ $\alpha = 9.9^\circ$
 $c_{M_A} = 0.70$ $\delta_{a_L} = 0.6^\circ$

(p) $M = 0.93$ $\alpha = 10.9^\circ$
 $c_{M_A} = 0.77$ $\delta_{a_L} = 0.3^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	2.062	2.158	2.179	2.244	1.806
2	1.663	1.938	1.917	1.977	1.711
3	1.494	1.813	1.747	1.870	1.430
4	1.428	1.725	1.652	1.755	1.108
5	1.274	1.465	1.337	1.541	0.937
6	1.078	1.345	1.269	1.275	0.864
7	1.004	1.107	1.261	1.220	0.826
8	1.019	1.960	1.329	1.326	0.560
9	•978	•974	1.207	1.115	•462
10	•849	•920	•936	•785	•215
11	•835	•846	•710	•650	•223
12	•651	•689	•464	•499	•157
13	•431	•476	•374	•342	•134
14	•290	•414	•309	•309	•242
15	•082	•112	•179	•055	•061
16	•124	•000	•224	•036	-
17	•123	•077	•184	•065	-
18	•115	•048	•182	•054	-
19	•029	-	•077	•068	•085

Orifice	Row				
	1	2	3	4	5
1	2.181	2.263	2.297	2.315	1.915
2	1.792	2.047	1.990	2.080	1.820
3	1.650	1.930	1.842	1.948	1.524
4	1.600	1.836	1.731	1.851	1.190
5	1.421	1.551	1.445	1.648	0.979
6	1.233	1.488	1.452	1.345	0.766
7	1.151	1.341	1.364	1.229	0.729
8	1.120	1.095	1.095	1.207	0.454
9	1.102	1.082	1.082	1.033	0.919
10	•946	•938	•889	•762	•274
11	•903	•807	•752	•674	•308
12	•663	•629	•548	•546	•247
13	•442	•476	•475	•396	•245
14	•397	•372	•414	•348	•298
15	•158	•195	•263	•116	•122
16	•153	•157	•325	•131	-
17	•099	•278	•303	•153	-
18	•120	•240	•300	•175	-
19	-	•029	•059	•197	•182

Orifice	Row				
	1	2	3	4	5
c_h	0.767	0.835	0.876	0.828	0.786
c_m	- .0500	- .0416	- .0571	- .0258	- .0492

Orifice	Row				
	1	2	3	4	5
c_n	0.849	0.913	0.932	0.858	0.807
c_m	- .0575	- .0551	- .0736	- .0363	- .0506

Orifice	Row				
	1	2	3	4	5
c_N'	0.793	$x'_{cp} = 29.8$	$y'_{cp} = 43.1$	$c_m' = 0.853$	$x'_{cp} = 30.6$
c_m'	- .0386	-	-	$c_m' = -0.481$	$y'_{cp} = 42.4$
c_b'	.344	-	-	$c_b' = .362$	-

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TABLE IX.- Continued.

 $[M \approx 0.92]$

$$(q) M = 0.93 \quad \alpha = 12.0^\circ \quad C_{NA} = 0.83 \quad C_{aL} = 0.5^\circ \text{ down}$$

$$(r) M = 0.92 \quad \alpha = 16.7^\circ \quad C_{NA} = 0.89 \quad C_{aL} = 0.6^\circ \text{ down}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.269	2.303	2.354	2.380	1.970	1	1.871	1.708	1.943	1.551	1.291
2	1.896	2.134	2.055	2.136	1.866	2	1.746	1.683	1.889	1.487	1.260
3	1.743	1.978	1.897	2.019	1.593	3	1.588	1.612	1.448	1.071	
4	1.680	1.938	1.816	1.906	1.235	4	1.698	1.617	1.836	1.379	.848
5	1.513	1.636	1.528	1.732	1.037	5	1.467	1.432	1.404	1.294	.751
6	1.324	1.558	1.528	1.421	.828	6	1.299	1.374	1.358	1.073	.742
7	1.226	1.472	1.432	1.273	.738	7	1.239	1.203	1.098	1.034	.655
8	1.210	1.187	1.450	1.228	.533	8	1.067	1.136	1.123	1.024	.526
9	1.194	1.140	1.013	.917	.476	9	1.050	1.007	.958	.872	.481
10	1.997	.954	.922	.855	.306	10	.885	.995	.932	.852	.236
11	.969	.810	.827	.769	.340	11	.861	.870	.872	.758	.276
12	.666	.656	.634	.649	.272	12	.714	.766	.695	.680	.398
13	.486	.472	.537	.500	.305	13	.584	.611	.645	.542	.486
14	.422	.398	.482	.379	.326	14	.499	.573	.583	.485	.563
15	.206	.238	.294	.154	.227	15	.505	.565	.589	.267	.490
16	.195	.227	.374	.168		16	.520	.612	.624	.460	
17	.179	.351	.340	.207		17	.513	.601	.621	.550	
18	.127	.307	.348	.206		18	.466	.560	.614	.521	
19	-.023	.137	.278	.244		19	.261	.318	.525	.481	
c_n	0.905	0.968	0.989	0.917	0.858	c_n	0.931	0.971	0.993	0.835	0.702
c_m	-.0634	-.0636	-.0860	-.0512	-.0624	c_m	-.1051	-.1249	-.1279	-.1058	-.0917

$$C_{N^1} = 0.907 \quad x'_{cp} = 31.3 \quad x'_{cp} = 36.8$$

$$C_m^1 = -0.0575 \quad y'_{cp} = 42.4 \quad y'_{cp} = 40.8$$

$$C_b^1 = .385 \quad C_m^1 = -.1035 \quad C_b^1 = .357$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.871	1.708	1.943	1.551	1.291	1	1.871	1.746	1.683	1.487	1.260
2	1.746	1.683	1.889	1.551	1.291	2	1.746	1.612	1.448	1.071	
3	1.588	1.612	1.889	1.551	1.291	3	1.588	1.617	1.836	1.379	.848
4	1.698	1.617	1.836	1.551	1.291	4	1.698	1.617	1.836	1.379	.848
5	1.467	1.432	1.404	1.294	1.260	5	1.467	1.432	1.404	1.294	.751
6	1.299	1.374	1.358	1.073	.742	6	1.299	1.374	1.358	1.073	.742
7	1.239	1.203	1.098	1.034	.655	7	1.239	1.203	1.098	1.034	.655
8	1.067	1.136	1.123	1.024	.526	8	1.067	1.136	1.123	1.024	.526
9	1.050	1.007	.958	.872	.481	9	1.050	1.007	.958	.872	.481
10	.885	.995	.932	.852	.236	10	.885	.995	.932	.852	.236
11	.861	.870	.872	.758		11	.861	.870	.872	.758	
12	.766	.766	.695	.398		12	.766	.766	.695	.398	
13	.584	.611	.645	.542	.486	13	.584	.611	.645	.542	.486
14	.499	.573	.583	.485	.563	14	.499	.573	.583	.485	.563
15	.505	.565	.589	.267	.490	15	.505	.565	.589	.267	.490
16	.520	.612	.624			16	.520	.612	.624		
17	.513	.601	.621			17	.513	.601	.621		
18	.466	.560	.614			18	.466	.560	.614		
19	.261	.318	.525			19	.261	.318	.525		

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TABLE IX.- Concluded.

 $[M \approx 0.92]$

(S) $M = 0.91$
 $C_{NA} = 0.89$
 $\alpha = 17.6^\circ$
 $\delta_{aL} = 0.1^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	1.840	1.662	1.785	1.541	1.327
2	1.704	1.674	1.634	1.485	1.264
3	1.619	1.547	1.589	1.453	1.081
4	1.647	1.631	1.541	1.375	.856
5	1.472	1.421	1.339	1.298	.788
6	1.343	1.346	1.276	1.099	.743
7	1.274	1.214	1.140	1.043	.679
8	1.171	1.081	1.157	1.058	.543
9	1.072	1.010	1.009	.910	.509
10	952	986	953	.866	.208
11	881	924	.917	.784	.266
12	791	.804	.695	.692	.377
13	632	.654	.663	.559	.496
14	582	.585	.588	.423	.550
15	533	.618	.576	.257	.538
16	597	.629	.605	.458	
17	593	.667	.614	.543	
18	482	.595	.590	.514	
19	305	.351	.492	.454	
c_n	0.972	0.977	0.957	0.841	0.717
c_m	-1.1204	-1.1323	-1.1338	-1.1044	-0.0944
c_b					
			$x'_{ep} = 37.4$		
			$y'_{ep} = 40.6$		

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TABLE X
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
[$M \approx 0.96$]

(a) $M = 0.95$
 $C_{NA} = 0.01$
 $\alpha = 1.8^\circ$
 $\delta_{aL} = 0.2^\circ$ down

(b) $M = 0.95$
 $C_{NA} = 0.05$
 $\alpha = 2.2^\circ$
 $\delta_{aL} = 0.2^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.159	0.192	0.237	0.301	0.107	1	0.304	0.261	0.360	0.453	0.129
2	.147	.179	.104	.312	.142	2	.221	.273	.148	.341	.135
3	.100	.165	.087	.273	.014	3	.179	.237	.123	.323	.029
4	.090	.152	.043	.241	.005	4	.150	.210	.101	.322	.016
5	.064	.022	.014	.126	.016	5	.100	.079	.042	.162	.044
6	.014	.051	.063	-.057	.011	6	.071	.088	.113	-.014	.007
7	.043	.022	.036	-.072	.022	7	.071	.065	.101	-.043	.061
8	.007	.044	.205	.161	-.005	8	.064	.066	.269	.190	.027
9	.017	.016	.050	.016	-.022	9	.063	.055	.077	.022	.022
10	.063	.082	.070	.071	.000	10	.090	.127	.119	.093	.038
11	-	.011	.041	.121	.089	11	.062	.114	.198	.118	.083
12	-	.064	.077	.033	.081	12	.022	.106	.077	.082	.067
13	-	.024	.017	.005	.022	13	.134	.069	.044	.044	.081
14	-	.234	.188	.157	-.165	14	.224	.194	.132	.168	.099
15	-	.075	.044	.022	-.079	15	.097	.065	.028	-.034	.107
16	-	.135	.005	.054	-.071	16	.157	.027	.071	-.071	.071
17	-	.057	.120	.137	-.054	17	-	.006	.136	.142	-.049
18	-	.248	-.061	.000	-.039	18	-	.222	-.039	.130	-.078
19	-	.005	-.125	-.125	-.159	19	.022	-.109	-.159	.022	
c_n	0.048	0.061	0.070	0.074	0.003	c_n	0.089	0.094	0.118	0.102	0.031
c_m	-.0050	-.0072	-.0115	-.0009	.0097	c_m	-.0097	-.0108	-.0212	-.0014	.0007
c_b	0.056					c_n'	0.089				
						c_m'	-.0082				
						c_b'	.036				
						x'_{cp}	32.6				
						y'_{cp}	40.7				

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TABLE X.- Continued.

 $[M \approx 0.96]$

(c) $M = 0.95$
 $c_{N_A} = 0.10$
 $\alpha = 2.7^\circ$
 $Q_{a_L} = 0.2^\circ$ down

(d) $M = 0.95$
 $c_{N_A} = 0.16$
 $\alpha = 3.3^\circ$
 $Q_{a_L} = 0.2^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.455	0.384	1.079	1.155	0.728	1	0.757	1.082	1.221	1.276	0.891
2	•324	•344	•289	•515	•490	2	•471	•530	•919	1.007	•801
3	•244	•301	•151	•366	•022	3	•351	•365	•598	•889	•496
4	•240	•318	•165	•329	•016	4	•345	•353	•265	•708	•032
5	•142	•143	•077	•225	•027	5	•249	•208	•148	•309	•044
6	•143	•124	•162	•036	•048	6	•207	•197	•183	•079	•011
7	•100	•122	•108	•029	•055	7	•178	•172	•173	•164	•039
8	•128	•117	•332	•256	•060	8	•178	•175	•346	•292	•157
9	•097	•116	•144	•011	•098	9	•171	•165	•193	•088	•142
10	•158	•193	•179	•148	•077	10	•227	•280	•309	•175	•077
11	•113	•201	•253	•162	•083	11	•158	•268	•340	•257	•083
12	•170	•132	•115	•178	•078	12	•201	•193	•148	•167	•072
13	•108	•050	•093	•105	•-070	13	•166	•089	•115	•099	•043
14	•240	•199	•142	•195	•-033	14	•305	•232	•142	•206	•016
15	•118	•093	•044	•-017	•-0146	15	•177	•098	•027	•006	•135
16	•173	•043	•054	•-033	•-033	16	•244	•059	•038	•022	
17	- •017	•136	•158	•-043	•-043	17	- •040	•158	•164	•-005	
18	- •195	•050	•178	•-0111	•-0111	18	- •174	•099	•200	•-106	
19	- •016	- •098	- •125	•-006	•-006	19	- •032	- •103	- •125	- •017	
c_n	0.139	0.147	0.184	0.163	0.086	c_n	0.208	0.222	0.248	0.233	0.162
c_m	- .0151	- .0187	- .0214	- .0005	.0054	c_m	- .0226	- .0219	- .0224	.0041	.0081
c_b'	0.144	•33.1	x'_{cp}	y'_{cp}	42.1	c_{N_A}'	0.213	x'_{cp}	31.0		
						c_m'	- .0129				
						c_b'	.090				
						y'_{cp}	42.4				

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TABLE X.- Continued.
 $[M \approx 0.96]$

(e) $M = 0.95$
 $C_{NA} = 0.21$
 $\alpha = 3.9^\circ$
 $\delta_{AL} = 0.2^\circ$ up

(f) $M = 0.95$
 $C_{NA} = 0.26$
 $\alpha = 4.4^\circ$
 $\delta_{AL} = 0.4^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.858	1.190	1.299	1.361	0.990	1	0.944	1.279	1.421	1.432	1.061
2	.603	1.008	1.029	1.100	.893	2	.705	1.108	1.103	1.187	.956
3	.465	.544	.842	.995	.610	3	.586	.908	.950	.088	.704
4	.420	.425	.680	.825	.133	4	.525	.576	.795	.934	.325
5	.319	.272	.190	.708	.022	5	.412	.344	.316	.834	.263
6	.264	.240	.232	.164	.011	6	.335	.298	.295	.436	.165
7	.227	.222	.202	.207	.011	7	.270	.279	.238	.329	.083
8	.220	.233	.388	.314	.135	8	.277	.270	.416	.394	.087
9	.233	.209	.243	.121	.141	9	.284	.324	.326	.164	.060
10	.274	.329	.362	.301	.027	10	.342	.395	.416	.399	-.011
11	.214	.304	.406	.257	.044	11	.265	.335	.433	.285	.022
12	.207	.242	.186	.173	.039	12	.254	.330	.262	.200	.011
13	.186	.116	.125	.105	-.070	13	.215	.138	.191	.110	-.096
14	.310	.248	.188	.173	.011	14	.337	.265	.213	.179	.000
15	.199	.158	.016	-.017	-.112	15	.209	.196	.027	-.039	-.079
16	.238	.064	.043	-.055	-.038	16	.270	.122	.027	-.082	-.076
17	-.028	.185	.120	-.038	-.010	17	.011	.196	.120	-.076	-.078
18	-.153	.143	.194	-.107	-.017	18	-.100	.187	.167	-.073	-.000
19	-.059	-.059	-.130	-.107	-.017	19	-.096	-.130	-.073	-.000	
c_n	0.246	0.281	0.319	0.282	0.186	c_n	0.300	0.343	0.369	0.345	0.242
c_m	-.0243	-.0250	-.0226	.0077	.0165	c_m	-.0315	-.0324	-.0255	.0073	.0214
	$C_N' = 0.264$	$x'_{cp} = 29.7$					$C_N' = 0.321$	$x'_{cp} = 30.3$			
	$C_m' = -.0125$	$y'_{cp} = 42.0$					$C_m' = -.0169$	$y'_{cp} = 42.2$			
	$C_b' = .111$						$C_b' = .155$				

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TABLE X.- Continued.
[$M \approx 0.96$]

(g) $M = 0.95$ $\alpha = 4.9^\circ$
 $c_{NA} = 0.30$ $\delta_{AL} = 0.6^\circ$ up

(h) $M = 0.96$ $\alpha = 5.2^\circ$
 $c_{NA} = 0.36$ $\delta_{AL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.107	1.357	1.482	1.521	1.151	1	1.266	1.485	1.558	1.576	1.262
2	.792	1.205	1.159	1.285	1.053	2	.870	1.270	1.234	1.343	1.119
3	.663	.984	1.034	1.157	.786	3	.755	1.073	1.101	1.215	.857
4	.636	.896	.886	1.026	.399	4	.710	1.060	.975	1.102	.452
5	.467	.393	.616	.895	.312	5	.539	.509	.748	.948	.390
6	.398	.370	.434	.541	.303	6	.464	.416	.700	.627	.352
7	.333	.336	.320	.542	.309	7	.406	.382	.433	.627	.377
8	.311	.327	.443	.633	.097	8	.364	.396	.522	.720	.224
9	.369	.383	.380	.257	.038	9	.410	.450	.430	.498	.081
10	.373	.433	.458	.425	-.038	10	.432	.477	.496	.475	-.022
11	.321	.385	.476	.317	-.050	11	.362	.417	.508	.352	-.027
12	.264	.368	.299	.205	-.033	12	.319	.429	.318	.250	.038
13	.244	.166	.220	.132	-.112	13	.265	.180	.280	.131	-.085
14	.336	.275	.238	.124	-.049	14	.370	.294	.290	.166	-.022
15	.241	.244	.104	-.056	-.084	15	.249	.247	.130	-.050	.055
16	.297	.149	.022	-.109	-.120	16	.331	.205	.075	-.087	
17	.135	.255	-.120	-.070	-.120	17	.268	.306	.118	-.069	
18	-.005	.231	.143	-.116	-.116	18	.177	.261	.165	-.071	
19	-.118	-.136	-.073	-.022	-.022	19	-.106	-.075	-.017	-.066	
c_n	0.249	0.405	0.418	0.395	0.303	c_n	0.411	0.463	0.482	0.454	0.359
c_m	-.0382	-.0379	-.0279	.0114	.0199	c_m	-.0520	-.0443	-.0345	.0038	.0101
c_b						$c_N' = 0.431$ $c_m' = -0.0265$ $c_b' = .182$					
						$x'_{cp} = 30.1$ $y'_{cp} = 42.2$					
						$x'_{cp} = 31.2$ $y'_{cp} = 42.3$					

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TABLE X.- Continued.
 $[M \approx 0.96]$

(1) $M = 0.96$
 $C_{NA} = 0.40$
 $\alpha = 5.6^\circ$
 $\delta_{BL} = 0.6^\circ$ up

(J) $M = 0.96$
 $C_{NA} = 0.44$
 $\alpha = 6.2^\circ$
 $\delta_{BL} = 0.6^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	1.351	1.539	1.629	1.633	1.258	1	1.519	1.616	1.696	1.693	1.319
2	.943	1.348	1.300	1.407	1.182	2	1.064	1.408	1.392	1.482	1.221
3	.805	1.143	1.144	1.279	.907	3	.908	1.253	1.241	1.340	.954
4	.792	1.131	1.039	1.159	.495	4	.864	1.178	1.114	1.265	.577
5	.609	.594	.811	1.010	.433	5	.692	.733	.885	1.084	.464
6	.542	.488	.797	.684	.400	6	.603	.580	.878	.738	.457
7	.462	.424	.639	.670	.415	7	.545	.508	.751	.746	.469
8	.406	.432	.606	.778	.331	8	.496	.488	.785	.826	.368
9	.466	.471	.490	.584	.231	9	.521	.524	.560	.680	.305
10	.437	.509	.528	.545	-.005	10	.488	.562	.570	.738	.140
11	.418	.462	.541	.408	.000	11	.483	.482	.588	.511	.169
12	.298	.440	.351	.282	-.005	12	.349	.466	.393	.319	.076
13	.309	.191	.307	.163	-.069	13	.342	.261	.344	.201	-.037
14	.408	.316	.330	.176	.011	14	.423	.326	.404	.213	.065
15	.270	.279	.146	-.028	-.083	15	.307	.294	.173	-.011	-.055
16	.336	.215	.129	-.070	-.070	16	.373	.273	.182	-.038	-.038
17	.302	.333	.129	-.053	-.053	17	.329	.364	.166	-.037	-.037
18	.218	.315	.171	-.060	-.066	18	.285	.352	.191	-.033	-.033
19	-.095	-.075	-.028	-.028	-.066	19	-.079	-.043	-.045	-.060	-.060
c_N	0.449	0.500	0.532	0.499	0.411	c_N	0.508	0.552	0.597	0.566	0.474
c_M	-.0552	-.0488	-.0405	.0019	.0009	c_M	-.0634	-.0558	-.0502	-.0128	-.0188

Orifice	Row					Row					
	1	2	3	4	5						
1	1.519	1.616	1.696	1.693	1.319	1	1.519	1.616	1.696	1.693	1.319
2	1.064	1.408	1.392	1.482	1.221	2	1.064	1.408	1.392	1.482	1.221
3	.908	1.253	1.241	1.340	.954	3	.908	1.253	1.241	1.340	.954
4	.864	1.178	1.114	1.265	.577	4	.864	1.178	1.114	1.265	.577
5	.692	.733	.885	1.084	.464	5	.692	.733	.885	1.084	.464
6	.603	.580	.878	.738	.457	6	.603	.580	.878	.738	.457
7	.545	.508	.751	.746	.469	7	.545	.508	.751	.746	.469
8	.496	.488	.785	.826	.368	8	.496	.488	.785	.826	.368
9	.521	.524	.560	.680	.305	9	.521	.524	.560	.680	.305
10	.488	.488	.570	.738	.140	10	.488	.488	.570	.738	.140
11	.483	.482	.588	.511	.169	11	.483	.482	.588	.511	.169
12	.349	.466	.393	.319	.076	12	.349	.466	.393	.319	.076
13	.342	.261	.344	.201	-.037	13	.342	.261	.344	.201	-.037
14	.423	.326	.404	.213	.065	14	.423	.326	.404	.213	.065
15	.307	.294	.173	-.011	-.055	15	.307	.294	.173	-.011	-.055
16	.373	.273	.182	-.038	-.038	16	.373	.273	.182	-.038	-.038
17	.329	.364	.166	-.037	-.037	17	.329	.364	.166	-.037	-.037
18	.285	.352	.191	-.033	-.033	18	.285	.352	.191	-.033	-.033
19	-.079	-.043	-.045	-.060	-.060	19	-.079	-.043	-.045	-.060	-.060
c_N	0.508	0.552	0.597	0.566	0.474	c_N	0.508	0.552	0.597	0.566	0.474
c_M	-.0634	-.0558	-.0502	-.0128	-.0188	c_M	-.0634	-.0558	-.0502	-.0128	-.0188

$$\begin{aligned} x'_{cp} &= 32.7 \\ y'_{cp} &= 42.9 \end{aligned}$$

$$\begin{aligned} c_N' &= 0.530 \\ c_m' &= -0.011 \\ c_b' &= .228 \end{aligned}$$

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TABLE X.- Continued.

 $[M \approx 0.96]$

(k) $M = 0.96$
 $c_{NA} = 0.50$
 $\alpha = 6.8^\circ$
 $c_{BL} = 0.6^\circ$ up

(l) $M = 0.96$
 $c_{NA} = 0.56$
 $\alpha = 7.5^\circ$
 $c_{BL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.622	1.714	1.771	1.781	1.399	1	1.733	1.793	1.854	1.892	1.501
2	1.168	1.503	1.446	1.543	1.300	2	1.338	1.578	1.536	1.632	1.374
3	0.995	1.348	1.314	1.413	1.006	3	1.104	1.450	1.410	1.516	1.101
4	0.969	1.238	1.194	1.311	0.647	4	1.068	1.369	1.297	1.415	0.759
5	0.784	0.898	0.963	1.155	0.541	5	0.878	1.091	1.028	1.228	0.607
6	0.647	0.682	0.936	0.796	0.500	6	0.733	0.784	1.042	0.890	0.585
7	0.616	0.580	0.838	0.839	0.514	7	0.702	0.666	0.912	0.926	0.570
8	0.553	0.554	0.905	0.907	0.390	8	0.646	0.642	1.012	0.975	0.445
9	0.584	0.601	0.643	0.741	0.370	9	0.675	0.657	0.841	0.802	0.409
10	0.530	0.607	0.624	0.809	0.189	10	0.574	0.679	0.701	0.882	0.228
11	0.546	0.533	0.622	0.716	0.257	11	0.581	0.586	0.683	0.801	0.297
12	0.387	0.489	0.426	0.378	0.191	12	0.424	0.534	0.481	0.593	0.247
13	0.381	0.328	0.361	0.239	0.111	13	0.406	0.394	0.432	0.327	0.233
14	0.451	0.349	0.420	0.214	0.108	14	0.479	0.360	0.456	0.262	0.260
15	0.339	0.322	0.222	0.050	0.050	15	0.351	0.355	0.304	0.067	0.183
16	0.374	0.289	0.193	-0.032	0.005	16	0.423	0.342	0.236	0.016	
17	0.363	0.413	0.226	0.005	0.005	17	0.403	0.468	0.270	0.005	
18	0.312	0.407	0.208	-0.044	0.004	18	0.344	0.441	0.283	0.000	
19	-0.058	-0.021	-0.028	-0.061	0.000	19	-0.021	-0.011	-0.034	-0.055	
c_n	0.5558	0.610	0.651	0.621	0.540	c_n	0.620	0.679	0.729	0.702	0.618
c_m	-0.0682	-0.0624	-0.0563	-0.0200	-0.0365	c_m	-0.0742	-0.0705	-0.0698	-0.0357	-0.0555

$c_N' = 0.585$
 $c_m' = -0.0481$
 $c_b' = .252$

$x'_1 c_p = 33.2$
 $y'_1 c_p = 43.0$

$c_N' = 0.656$
 $c_m' = -.0591$
 $c_b' = .284$

$x'_1 c_p = 26.0$
 $y'_1 c_p = 43.3$

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TABLE X.- Continued.

 $[M \approx 0.96]$

(m) $M = 0.95$
 $c_{NA} = 0.62$
 $\alpha = 8.1^\circ$
 $\delta_{AL} = 0.8^\circ$ up

(n) $M = 0.95$
 $c_{NA} = 0.66$
 $\alpha = 8.6^\circ$
 $\delta_{AL} = 0.8^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.856	1.890	1.941	1.937	1.573	1	1.931	1.942	2.009	2.033	1.611
2	1.396	1.671	1.626	1.727	1.465	2	1.442	1.745	1.688	1.759	1.532
3	1.195	1.542	1.503	1.588	1.199	3	1.261	1.624	1.549	1.662	1.273
4	1.141	1.433	1.381	1.516	.843	4	1.218	1.501	1.441	1.556	.913
5	.974	1.182	1.117	1.345	.698	5	1.068	1.265	1.182	1.362	.754
6	.836	.918	1.131	.987	.657	6	.895	1.043	1.210	1.103	.722
7	.755	.769	1.024	.994	.639	7	.813	.842	1.054	1.032	.679
8	.727	.732	1.102	1.074	.490	8	.799	.784	1.167	1.134	.523
9	.747	.726	.971	.899	.454	9	.822	.793	1.023	.939	.486
10	.639	.742	.785	.940	.262	10	.683	.788	.894	.991	.300
11	.662	.645	.752	.888	.309	11	.680	.687	.813	.923	.337
12	.495	.569	.522	.665	.292	12	.528	.614	.566	.694	.292
13	.476	.451	.499	.526	.272	13	.463	.474	.527	.576	.320
14	.546	.406	.509	.323	.305	14	.563	.462	.550	.442	.333
15	.422	.378	.350	.112	.234	15	.439	.401	.389	.202	.285
16	.468	.376	.291	.055		16	.485	.403	.324	.093	
17	.428	.503	.304	.065		17	.440	.547	.315	.086	
18	.325	.487	.290	.000		18	.310	.527	.290	.017	
19	-.005	.005	-.062	-.072		19	.016	-.016	-.023	-.028	
c_n	0.685	0.742	0.797	0.776	0.682	c_A	0.726	0.796	0.852	0.831	0.728
c_m	-.0841	-.0789	-.0798	-.0687	-.0654	c_B	-.0863	-.0868	-.0886	-.0599	-.0736

$$\begin{aligned} c_{N'} &= 0.720 & x'_{cp} &= 34.5 \\ c_{m'} &= -0.687 & y'_{cp} &= 43.4 \\ c_{B'} &= .312 & & \end{aligned}$$

$$\begin{aligned} c_{N'} &= 0.771 & x'_{cp} &= 24.9 \\ c_{m'} &= -0.0763 & y'_{cp} &= 43.4 \\ c_{B'} &= .334 & & \end{aligned}$$

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TABLE X.- Continued.

 $[M \approx 0.96]$

(o) $M = 0.95$
 $C_{NA} = 0.71$
 $\alpha = 9.3^\circ$
 $\delta_{aL} = 0.8^\circ$ up

(p) $M = 0.96$
 $C_{NA} = 0.76$
 $\alpha = 10.3^\circ$
 $\delta_{aL} = 0.5^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	1.962	2.033	2.069	2.086	1.704	1	2.017	2.066	2.106	2.150	1.745
2	1.530	1.825	1.770	1.854	1.616	2	1.615	1.891	1.806	1.899	1.619
3	1.367	1.696	1.628	1.748	1.336	3	1.489	1.787	1.694	1.782	1.349
4	1.291	1.623	1.505	1.643	0.998	4	1.401	1.675	1.567	1.689	1.048
5	1.151	1.333	1.237	1.452	0.806	5	1.285	1.408	1.292	1.514	0.897
6	0.970	1.208	1.251	1.129	0.768	6	1.083	1.303	1.319	1.231	0.821
7	0.888	0.953	1.138	1.122	0.731	7	1.010	1.068	1.241	1.204	0.804
8	0.874	0.861	1.236	1.190	0.596	8	0.983	0.967	1.285	1.237	0.629
9	0.882	0.874	1.110	1.020	0.544	9	0.953	0.936	1.160	1.067	0.564
10	0.733	0.857	1.034	1.040	0.346	10	0.817	0.899	1.116	1.101	0.435
11	0.740	0.747	0.888	0.977	0.389	11	0.776	0.823	1.024	1.048	0.451
12	0.578	0.667	0.646	0.745	0.349	12	0.616	0.704	0.725	0.810	0.391
13	0.499	0.520	0.600	0.645	0.370	13	0.549	0.541	0.644	0.704	0.462
14	0.620	0.519	0.593	0.515	0.389	14	0.637	0.561	0.628	0.624	0.457
15	0.462	0.424	0.451	0.326	0.337	15	0.494	0.437	0.495	0.419	0.397
16	0.525	0.458	0.375	0.208	0.208	16	0.529	0.485	0.447	0.356	
17	0.385	0.598	0.338	0.146	0.146	17	0.521	0.637	0.354	0.236	
18	0.279	0.573	0.254	0.022	0.022	18	0.515	0.597	0.267	0.145	
19	0.038	0.044	0.000	-0.011	0.125	19	0.125	0.158	0.088	0.086	
c_n	0.774	0.869	0.917	0.893	0.789	c_n	0.855	0.926	0.979	0.970	0.844
c_m	-0.0920	-0.0972	-0.1004	-0.0740	-0.0858	c_m	-0.1083	-0.1051	-0.1140	-0.0968	-0.1004
c_b'	0.833	$x'_{cp} = 35.4$	$y'_{cp} = 43.3$			c_n'	0.896				
						c_m'	-0.0995				
						c_b'	$.388$				

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TABLE X.—Continued.

$$[M \approx 0.96]$$

(q) $C_{N_A} = 0.96$	$\alpha = 10.8^\circ$	$c_{\alpha_L} = 0.5^\circ$ up
(r) $C_{N_A} = 0.95$	$\alpha = 11.2^\circ$	$c_{\alpha_L} = 0.5^\circ$ up

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Orifice	Row				
	1	2	3	4	5
1	2.142	2.208	2.268	2.284	1.871
2	1.800	2.041	1.929	2.030	1.763
3	1.645	1.914	1.820	1.923	1.503
4	1.584	1.807	1.697	1.830	1.158
5	1.416	1.549	1.442	1.627	1.055
6	1.267	1.422	1.426	1.375	905
7	1.156	1.358	1.358	1.305	897
8	1.114	1.137	1.408	1.383	722
9	1.078	1.073	1.281	1.190	671
10	.931	1.019	1.244	1.199	514
11	.880	.945	1.180	1.135	537
12	.727	.821	.880	.922	470
13	.623	.645	.781	.789	535
14	.719	.654	.751	.690	574
15	.573	.483	.613	.516	465
16	.592	.542	.450	.449	
17	.572	.725	.328	.369	
18	.185	.225	.212	.252	
19					
c_n	0.969	1.047	1.094	1.081	0.955
c_m	-1.247	-1.256	-1.350	-1.176	-1.203
c_N'	= 1.008				
c_m'	= -1.1183				
c_b'	= .436				
		x'_{cp} = 36.7			
		y'_{cp} = 43.2			

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TABLE X.—Continued.

$$(s) \quad M = 0.95 \quad C_{N_A} = 0.91$$

$$\alpha = 12.0^{\circ}$$

$$\delta_{a_L} = 0.6^{\circ} \text{ up}$$

Orifice	Row				
	1	2	3	4	5

Orifice	Row					C _N	C _m	C _b	$\frac{x'_{cp}}{y'_{cp}}$
	1	2	3	4	5				
1	2.272	2.288	2.327	2.316	1.981				
2	1.946	2.153	2.069	2.126	1.855				
3	1.830	2.026	1.922	2.023	1.587				
4	1.729	1.946	1.827	1.937	1.257				
5	1.553	1.647	1.557	1.752	1.191				
6	1.374	1.580	1.552	1.478	1.024				
7	1.269	1.493	1.485	1.447	0.982				
8	1.232	1.254	1.254	1.477	0.823				
9	1.202	1.201	1.388	1.309	0.754				
10	1.051	1.128	1.336	1.290	0.585				
11	0.971	1.061	1.272	1.221	0.585				
12	0.829	0.894	1.062	1.049	0.526				
13	0.675	0.743	0.963	0.907	0.636				
14	0.790	0.725	0.711	0.759	0.630				
15	0.630	0.572	0.538	0.571	0.574				
16	0.662	0.596	0.571	0.480					
17	0.663	0.802	0.510	0.426					
18	0.649	0.768	0.505	0.350					
19	0.223	0.294	0.403	0.269					
C _N	1.069	1.146	1.194	1.173	1.050				
C _m	-1.115	-1.128	-1.179	-1.165	-1.194				

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TABLE X.- Concluded.

 $[M \approx 0.96]$

$$(u) \quad M = 0.96 \quad \alpha = 13.6^\circ \quad \delta_{a_L} = 0.4^\circ \text{ up}$$

$$C_{NA} = 1.03$$

Orifice	Row				
	1	2	3	4	5
1	2.315	2.325	2.371	2.360	2.032
2	2.041	2.238	2.150	2.227	1.952
3	1.927	2.088	2.016	2.091	1.681
4	1.835	2.023	1.914	2.021	1.348
5	1.673	1.742	1.644	1.847	1.284
6	1.471	1.659	1.639	1.565	1.108
7	1.353	1.543	1.551	1.544	1.039
8	1.321	1.390	1.616	1.561	0.878
9	1.285	1.294	1.458	1.390	0.821
10	1.139	1.224	1.417	1.276	0.638
11	1.017	1.136	1.106	1.026	0.633
12	0.875	0.971	0.837	0.855	0.565
13	0.723	0.760	0.774	0.765	0.672
14	0.837	0.684	0.719	0.577	0.654
15	0.609	0.465	0.569	0.397	0.488
16	0.520	0.544	0.643	0.383	
17	0.476	0.722	0.614	0.447	
18	0.423	0.640	0.657	0.467	
19	0.201	0.269	0.526	0.436	
c_n	1.102	1.185	1.231	1.160	1.113
c_m	-1.1292	-1.1363	-1.1577	-1.1152	-1.1459
C_N'	1.129				
C_m'	-1.1270				
C_b'	.485				
		$x'_{cp} = 36.2$			
		$y'_{cp} = 43.0$			

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TABLE XI
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

 $[M \approx 0.99]$

(a) $M = 1.00$
 $c_{NA} = 0.04$
 $\alpha = 36^\circ$
 $\delta_{AL} = 0$

(b) $M = 1.00$
 $c_{NA} = 0.12$
 $\alpha = 35^\circ$
 $\delta_{AL} = 0.2^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.315	0.269	0.911	1.003	0.655	1	0.543	0.812	1.076	1.129	0.772
2	.193	.288	.168	.285	.180	2	.344	.366	.763	.847	.694
3	.182	.275	.120	.320	-.050	3	.279	.341	.287	.682	.093
4	.144	.221	.100	.313	.000	4	.240	.300	.180	.398	-.046
5	.093	.094	.049	.178	.048	5	.148	.199	.103	.200	.019
6	.106	.076	.074	.006	.033	6	.161	.145	.122	.062	.014
7	.112	.069	.120	-.006	.058	7	.148	.124	.162	.050	.058
8	.062	.064	.241	.185	.024	8	.135	.152	.300	.259	.061
9	.045	.082	.101	.029	-.010	9	.094	.119	.158	.062	.014
10	.106	.130	.109	.096	.019	10	.169	.195	.187	.123	.066
11	.064	.126	.178	.103	-.019	11	.108	.183	.247	.135	.014
12	.097	.101	.081	.076	-.015	12	.161	.196	.133	.136	.019
13	.073	.029	.086	.096	-.066	13	.136	.053	.090	.134	-.037
14	.195	.174	.093	.137	-.034	14	.226	.191	.158	.183	-.014
15	.099	.057	.010	-.049	-.093	15	.126	.080	.000	-.010	-.083
16	.118	.037	.014	-.091	16	.159	.051	.019	-.052		
17	.079	.090	.134	-.038	17	.108	.094	.128	-.023		
18	.083	.120	.132	-.068	18	.119	.129	.145	-.010		
19	-.038	.048	.015	-.005	19	-.088	.066	.034	-.029		

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.105	0.113	0.131	0.114	0.044	1	0.164	0.183	0.201	0.183	0.091
2	-.0211	-.0181	-.0138	.0056	.0121	2	-.0252	-.0211	-.0170	-.0014	.0116

$$\begin{aligned}x'_{cp} &= 33.8 \\y'_{cp} &= 40.3\end{aligned}$$

$$\begin{aligned}c_N' &= 0.168 \\c_M' &= -.0122 \\c_D' &= .069\end{aligned}$$

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TABLE XI.- Continued.

 $[M \approx 0.99]$

(e) $M = 0.99$
 $C_{NA} = 0.31$ $\alpha = 5.3^\circ$
 $\delta_{aL} = 0.2^\circ$ up

(r) $M = 0.99$
 $C_{HA} = 0.37$ $\alpha = 5.9^\circ$
 $\delta_{aL} = 0.3^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.101	1.312	1.432	1.453	1.101	1	1.243	1.400	1.500	1.521	1.174
2	.730	1.178	1.118	1.210	.992	2	.836	1.239	1.194	1.285	1.053
3	.692	.989	1.021	1.106	.737	3	.741	1.057	1.082	1.180	.805
4	.617	.948	.851	.997	.380	4	.707	1.022	.931	1.085	.444
5	.476	.450	.656	.869	.340	5	.549	.529	.740	.929	.391
6	.429	.364	.542	.527	.258	6	.508	.432	.686	.582	.321
7	.361	.340	.385	.558	.324	7	.428	.383	.557	.613	.357
8	.325	.328	.449	.619	.119	8	.392	.384	.492	.688	.299
9	.352	.368	.379	.288	.065	9	.401	.438	.441	.503	.139
10	.389	.405	.459	.446	.047	10	.434	.448	.505	.474	.056
11	.364	.419	.479	.341	-.005	11	.407	.450	.517	.374	-.005
12	.279	.397	.306	.220	-.014	12	.315	.402	.334	.266	-.033
13	.261	.174	.273	.164	-.036	13	.282	.207	.283	.187	-.018
14	.328	.276	.250	.198	-.005	14	.365	.277	.310	.216	.000
15	.251	.226	.131	.010	-.048	15	.274	.245	.140	.014	-.029
16	.276	.167	.083	-.042	16	.294	.204	.129	-.042	16	
17	.259	.268	.120	-.009	17	.279	.295	.120	-.009	17	
18	.242	.229	.142	-.028	18	.264	.290	.151	-.009	18	
19	-.041	.060	.014	-.071	19	-.036	.060	.014	-.071	19	
c_n	0.372	0.416	0.432	0.410	0.314	c_n	0.423	0.459	0.484	0.460	0.367
c_m	-.0518	-.0404	-.0335	-.0023	.0082	c_m	-.0563	-.0458	-.0393	-.0070	.0001
c_b'	0.387	$x'_{cp} = 31.8$	$y'_{cp} = 42.2$				$C_N' = 0.434$	$x'_{cp} = 32.3$			
		$C_m' = -0.262$	$C_b' = .163$				$C_m' = -0.315$	$y'_{cp} = 42.4$			

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TABLE XI.- Continued.
 $[M \approx 0.99]$

(g) $M = 0.99$ $\alpha = 6.5^\circ$
 $c_{N_A} = 0.41$ $\delta_{a_L} = 0.3^\circ$ up

(h) $M = 0.99$ $\alpha = 6.8^\circ$
 $c_{N_A} = 0.46$ $\delta_{a_L} = 0.3^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	1.418	1.515	1.590	1.623	1.269	1	1.544	1.582	1.655	1.700	1.344
2	.933	1.341	1.312	1.369	1.135	2	1.073	1.422	1.396	1.446	1.198
3	.341	1.213	1.166	1.269	.875	3	.946	1.288	1.242	1.363	.938
4	.805	1.081	1.031	1.169	.518	4	.883	1.144	1.113	1.246	.614
5	.647	.677	.832	1.033	.458	5	.709	.831	.899	1.107	.501
6	.553	.514	.796	.663	.413	6	.633	.615	.869	.744	.455
7	.508	.452	.724	.694	.406	7	.563	.538	.811	.787	.468
8	.454	.453	.655	.758	.337	8	.521	.516	.831	.822	.384
9	.460	.496	.513	.602	.278	9	.529	.544	.598	.678	.302
10	.462	.515	.553	.680	.168	10	.522	.577	.591	.742	.229
11	.466	.469	.537	.466	.137	11	.511	.501	.608	.672	.232
12	.334	.460	.377	.294	.047	12	.384	.484	.397	.336	.175
13	.329	.255	.316	.216	-	13	.338	.302	.349	.259	.082
14	.385	.320	.358	.221	.042	14	.422	.339	.372	.240	.094
15	.298	.259	.150	.029	-	15	.307	.288	.206	.043	-.010
16	.323	.272	.176	-	.033	16	.351	.296	.167	-.014	
17	.323	.320	.181	.000		17	.343	.357	.228	.014	
18	.301	.342	.193	-	.009	18	.315	.367	.221	.014	
19	-	.018	.051	-	.005	-	.071	.005	.060	-	.014
						19					.076
c_n	0.474	0.521	0.553	0.529	0.438		0.528	0.574	0.610	0.587	0.501
c_m	-.0610	-.0551	-.0474	-.0140	-.0155		-.0663	-.0605	-.0530	-.0218	-.0308
c_b	0.496	0.400	0.212								
	x'_{cp}	y'_{cp}									
	33.1	42.8									

Orifice	Row					Row					
	1	2	3	4	5						
1	1.048	1.515	1.590	1.623	1.269	1	1.544	1.582	1.655	1.700	1.344
2	.933	1.341	1.312	1.369	1.135	2	1.073	1.422	1.396	1.446	1.198
3	.341	1.213	1.166	1.269	.875	3	.946	1.288	1.242	1.363	.938
4	.805	1.081	1.031	1.169	.518	4	.883	1.144	1.113	1.246	.614
5	.647	.677	.832	1.033	.458	5	.709	.831	.899	1.107	.501
6	.553	.514	.796	.663	.413	6	.633	.615	.869	.744	.455
7	.508	.452	.724	.694	.406	7	.563	.538	.811	.787	.468
8	.454	.453	.655	.758	.337	8	.521	.516	.831	.822	.384
9	.460	.496	.513	.602	.278	9	.529	.544	.598	.678	.302
10	.462	.515	.553	.680	.168	10	.522	.577	.591	.742	.229
11	.466	.469	.537	.466	.137	11	.511	.501	.608	.672	.232
12	.334	.460	.377	.294	.047	12	.384	.484	.397	.336	.175
13	.329	.255	.316	.216	-	13	.338	.302	.349	.259	.082
14	.385	.320	.358	.221	.042	14	.422	.339	.372	.240	.094
15	.298	.259	.150	.029	-	15	.307	.288	.206	.043	-.010
16	.323	.272	.176	-	.033	16	.351	.296	.167	-.014	
17	.323	.320	.181	.000		17	.343	.357	.228	.014	
18	.301	.342	.193	-	.009	18	.315	.367	.221	.014	
19	-	.018	.051	-	.005	19					.076
c_n	0.474	0.521	0.553	0.529	0.438		0.528	0.574	0.610	0.587	0.501
c_m	-.0610	-.0551	-.0474	-.0140	-.0155		-.0663	-.0605	-.0530	-.0218	-.0308
c_b	0.496	0.400	0.212								
	x'_{cp}	y'_{cp}									
	33.1	42.8									

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TABLE XI.—Continued.

$$(1) \quad C_N = 0.99 \\ C_{N_A} = 0.52 \\ \alpha = 7.4^{\circ} \\ \delta_{aT} = 0.4^{\circ} \text{ up}$$

$$d\mu = 0.5^o$$

$$(j) \quad C_{NM} = 0.58$$

Orifice	Row					
	1	2	3	4	5	
1	1.660	1.704	1.752	1.797	1.415	
2	1.240	1.519	1.477	1.525	1.304	
3	1.072	1.390	1.338	1.441	1.045	
4	.982	1.265	1.202	1.343	.703	
5	.820	1.043	.992	1.183	.577	
6	.720	.716	.968	.856	.520	
7	.675	.638	.888	.863	.541	
8	.608	.587	.931	.931	.413	
9	.609	.630	.761	.770	.363	
10	.564	.639	.667	.824	.268	
11	.546	.551	.662	.774	.261	
12	.413	.514	.449	.550	.223	
13	.385	.370	.406	.335	.220	
14	.456	.369	.417	.260	.253	
15	.345	.326	.263	.091	.120	
16	.375	.328	.223	.023		
17	.383	.405	.266	.060		
18	.357	.415	.273	.019		
19	.028	.079	-.024	-.072		
c _n	0.590	0.643	0.683	0.670	0.579	
c _m	.0721	.0678	.0652	.0363	.0498	
C _{N'}	0.621		x' _{op} = 34.1			
C _{m'}	= - .0567		y' _{op} = 43.3			
C _D	.269					

$$d\mu = 0.5^o$$

$$(j) \quad C_{NM} = 0.58$$

Orifice	Row					$x'_{op} = 24.6$	$y'_{op} = 43.3$
	1	2	3	4	5		
1	1.756	1.766	1.811	1.843	1.479		
2	1.330	1.608	1.556	1.621	1.380		
3	1.166	1.485	1.390	1.524	1.103		
4	1.074	1.336	1.297	1.421	.791		
5	926	1.143	1.042	1.263	.640		
6	789	836	1.066	919	.595		
7	749	719	951	932	.599		
8	676	663	1.029	.995	.455		
9	678	697	.905	.837	.392		
10	606	693	.747	.873	.296		
11	605	605	.710	.843	.286		
12	454	548	.511	.611	.261		
13	411	399	.454	.478	.262		
14	508	384	.452	.320	.292		
15	392	345	.325	.121	.217		
16	408	366	.251	.066			
17	398	443	.295	.079			
18	393	439	.306	.043			
19	.055	.107	-.015	-.062			
c_n	0.646	0.698	0.751	0.730	0.634		
c_m	-0.0800	-0.0739	-0.0756	-0.0479	-0.0604		

TABLE XI.- Continued.

 $[M \approx 0.99]$

$$(k) M = 0.98 \quad \alpha = 8.6^\circ \quad \delta_{aL} = 0.5^\circ \text{ up}$$

$$c_{NA} = 0.62 \quad c_{NA} = 0.98 \quad \delta_{aL} = 0.5^\circ \text{ up}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.850	1.844	1.880	1.913	1.559	1	1.920	1.917	1.975	2.014	1.625
2	1.393	1.676	1.626	1.665	1.422	2	1.478	1.787	1.733	1.758	1.518
3	1.238	1.546	1.470	1.561	1.150	3	1.333	1.638	1.542	1.658	1.238
4	1.156	1.409	1.357	1.490	0.845	4	1.267	1.550	1.459	1.576	0.924
5	0.984	1.209	1.101	1.305	0.713	5	1.088	1.291	1.186	1.398	0.797
6	0.859	0.946	0.913	1.003	0.652	6	0.962	1.133	1.021	1.070	0.715
7	0.777	0.790	0.017	0.997	0.639	7	0.853	0.879	1.110	1.089	0.704
8	0.746	0.722	0.070	1.037	0.504	8	0.859	0.825	1.161	1.156	0.542
9	0.730	0.752	0.965	0.888	0.422	9	0.817	0.818	1.038	0.954	0.478
10	0.658	0.728	0.825	0.933	0.312	10	0.707	0.779	0.984	0.995	0.368
11	0.632	0.643	0.755	0.885	0.320	11	0.678	0.695	0.821	0.938	0.372
12	0.493	0.569	0.537	0.660	0.286	12	0.526	0.623	0.600	0.724	0.318
13	0.434	0.443	0.498	0.551	0.300	13	0.490	0.467	0.541	0.605	0.341
14	0.543	0.418	0.485	0.406	0.326	14	0.554	0.471	0.534	0.504	0.391
15	0.412	0.356	0.360	0.174	0.261	15	0.435	0.393	0.378	0.304	0.308
16	0.438	0.385	0.294	0.080	0.080	16	0.466	0.431	0.378	0.162	
17	0.419	0.473	0.315	0.107	0.07	17	0.458	0.530	0.351	0.156	
18	0.431	0.474	0.321	0.038	0.038	18	0.445	0.508	0.343	0.043	
19	0.078	0.131	-0.005	-0.053	-0.053	19	0.098	0.166	0.005	-0.010	
c_n	0.694	0.746	0.797	0.780	0.680	c_n	0.753	0.819	0.877	0.854	0.744
c_m	-0.0867	-0.0792	-0.0832	-0.0567	-0.0686	c_m	-0.0920	-0.0878	-0.0963	-0.0707	-0.0803
c_b	$c_N' = 0.724$ $c_m' = -0.0713$ $c_b' = .313$		$x'_{cp} = \frac{34}{43.3}$ $y'_{cp} = \frac{9}{43.3}$				$c_N' = 0.793$ $c_m' = -.0810$ $c_b' = .343$		$x'_{cp} = 35.2$ $y'_{cp} = 43.3$		

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TABLE XI.—Continued.

[M ≈ 0.99]

$$\alpha = 9.4^\circ \quad \delta_{\text{air}} = 0.4^\circ \quad \text{up}$$

$$T_{\text{air}} = 10.0^{\circ} \text{ C}$$

$$(n) C_M = 0.99 \\ C_{MA} = 0.72$$

Orifice	Row					5
	1	2	3	4		
1	1.893	1.901	1.946	1.954	1.611	
2	1.449	1.732	1.673	1.735	1.475	
3	1.307	1.617	1.554	1.637	1.202	
4	1.243	1.519	1.412	1.563	.915	
5	1.098	1.266	1.170	1.383	.764	
6	•909	•1113	•1.070	•1.056	•711	
7	•875	•871	•0.95	•0.75	•687	
8	•826	•818	•1.34	•1.116	•538	
9	•812	•807	•0.23	•927	•481	
10	•712	•784	•979	•981	•354	
11	•691	•705	•815	•934	•387	
12	•527	•618	•604	•716	•325	
13	•466	•451	•533	•600	•355	
14	•568	•479	•539	•525	•373	
15	•425	•379	•392	•325	•319	
16	•464	•412	•360	•210		
17	•471	•527	•338	•175		
18	•443	•510	•344	•071		
19	•128	•143	•024	- •005		
c_{in}	0.746	0.809	0.863	0.848	0.733	
c_{in}	- .0928	- .0875	- .0970	- .0747	- .0807	
c_{out}						$\frac{x^1_{\text{op}}}{y^1_{\text{op}}} = 35.5$
c_{out}						$\frac{x^1_{\text{op}}}{y^1_{\text{op}}} = 43.3$
c_{out}						$\frac{x^1_{\text{op}}}{y^1_{\text{op}}} = 34.0$

Orifice	Row					
	1	2	3	4	5	
1	1.961	1.989	2.027	2.053	1.688	
2	1.547	1.829	1.766	1.808	1.533	
3	1.432	1.719	1.651	1.709	1.284	
4	1.334	1.603	1.501	1.623	0.981	
5	1.214	1.360	1.256	1.470	0.872	
6	1.024	1.257	1.232	1.136	0.748	
7	0.978	1.011	1.213	1.149	0.777	
8	0.917	0.904	1.214	1.180	0.584	
9	0.900	0.878	1.100	1.022	0.540	
10	0.771	0.855	1.083	1.062	0.380	
11	0.753	0.775	0.938	0.988	0.432	
12	0.576	0.655	0.669	0.776	0.346	
13	0.519	0.516	0.602	0.660	0.394	
14	0.600	0.529	0.581	0.574	0.427	
15	0.483	0.418	0.456	0.399	0.370	
16	0.500	0.451	0.422	0.314		
17	0.508	0.581	0.369	0.232		
18	0.464	0.551	0.319	0.104		
19	0.142	0.181	0.058	0.043		
c_n	0.811	0.880	0.933	0.918	0.800	
c_m	-1.011	-0.0973	-1.085	-0.0888	-0.0926	
c_x^*	0.851					$x^*_{cp} = 35.9$
c_m^*	-0.0923					$y^*_{cp} = 43.3$
c_h^*	0.368					

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TABLE XI.- Continued.

 $[M \approx 0.99]$
 $(o) M = 0.98$
 $C_{NA} = 0.77$
 $\alpha = 10.4^\circ$
 $\delta_{aL} = 0.5^\circ$ up

 $(p) M = 0.98$
 $C_{NA} = 0.81$
 $\alpha = 11.0^\circ$
 $\delta_{aL} = 0.5^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.016	2.030	2.082	2.077	1.711	1	2.071	2.089	2.131	2.157	1.795
2	1.620	1.902	1.803	1.869	1.611	2	1.693	1.950	1.852	1.911	1.632
3	1.503	1.767	1.693	1.739	1.343	3	1.567	1.833	1.758	1.798	1.375
4	1.422	1.669	1.548	1.697	1.038	4	1.514	1.710	1.595	1.750	1.095
5	1.291	1.389	1.295	1.498	0.903	5	1.354	1.471	1.369	1.579	0.970
6	1.082	1.323	1.289	1.213	0.805	6	1.156	1.362	1.351	1.245	0.842
7	1.029	1.131	1.242	1.177	0.793	7	1.072	1.261	1.323	1.258	0.836
8	0.980	0.969	1.266	1.246	0.618	8	1.035	1.013	1.328	1.291	0.663
9	0.961	0.933	1.141	1.081	0.579	9	1.021	0.995	1.205	1.111	0.601
10	0.818	0.895	1.123	1.079	0.428	10	0.855	0.943	1.176	1.137	0.440
11	0.780	0.835	1.020	1.044	0.452	11	0.808	0.862	1.107	1.074	0.479
12	0.618	0.713	0.736	0.824	0.385	12	0.649	0.760	0.797	0.866	0.406
13	0.541	0.536	0.650	0.700	0.446	13	0.582	0.578	0.696	0.732	0.472
14	0.630	0.578	0.626	0.608	0.452	14	0.657	0.624	0.678	0.631	0.487
15	0.484	0.448	0.490	0.425	0.385	15	0.529	0.455	0.531	0.427	0.416
16	0.529	0.475	0.466	0.372		16	0.551	0.515	0.478	0.412	
17	0.529	0.616	0.351	0.288		17	0.561	0.643	0.329	0.346	
18	0.493	0.572	0.283	0.162		18	0.523	0.608	0.294	0.211	
19	0.179	0.205	0.097	0.086		19	0.180	0.216	0.151	0.120	
c_n	0.857	0.929	0.976	0.966	0.838	c_n	0.903	0.975	1.027	1.009	0.879
c_m	-1.070	-1.053	-1.161	-0.989	-0.996	c_m	-1.129	-1.136	-1.251	-1.069	-1.057
c_b'	0.896			$x'_{cp} = 36.1$		$c_N' = 0.940$			$x'_{cp} = 36.4$		
c_m'	-0.0998			$y'_{cp} = 43.2$		$c_M' = -1.071$			$y'_{cp} = 43.2$		
c_b'	.367					$c_b' = .406$					

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TABLE XI.- Concluded.

 $[M \approx 0.99]$

$$(q) M = 0.98 \quad \alpha = 11.4^\circ \quad \delta_{aL} = 0.6^\circ \text{ up}$$

$$C_{NA} = 0.92 \quad C_N = 0.98 \quad \delta_{aL} = 0.7^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	2.128	2.143	2.181	2.201	1.808
2	1.789	1.988	1.891	1.949	1.713
3	1.624	1.889	1.809	1.861	1.438
4	1.579	1.779	1.657	1.776	1.137
5	1.434	1.509	1.413	1.598	1.032
6	1.218	1.431	1.400	1.307	0.888
7	1.134	1.336	1.343	1.283	0.880
8	1.085	1.095	1.389	1.342	1.706
9	1.071	1.048	1.249	1.154	0.653
10	0.910	1.000	1.219	1.180	0.473
11	0.872	0.902	1.140	1.094	0.513
12	0.681	0.784	0.854	0.923	0.445
13	0.591	0.616	0.749	0.761	0.509
14	0.685	0.648	0.735	0.673	0.544
15	0.538	0.479	0.588	0.490	0.450
16	0.575	0.524	0.454	0.450	0.425
17	0.581	0.680	0.334	0.369	0.17
18	0.560	0.637	0.289	0.268	0.18
19	0.217	0.235	0.225	0.178	0.19

Orifice	Row				
	1	2	3	4	5
1	2.193	2.217	2.252	2.229	1.895
2	1.884	2.076	1.966	2.038	1.774
3	1.734	1.958	1.890	1.936	1.523
4	1.701	1.867	1.737	1.871	1.219
5	1.524	1.600	1.489	1.700	1.120
6	1.307	1.511	1.465	1.391	0.968
7	1.215	1.401	1.366	1.393	0.939
8	1.172	1.204	1.466	1.414	0.767
9	1.157	1.131	1.329	1.229	0.700
10	0.980	1.079	1.293	1.236	0.543
11	0.927	1.016	1.215	1.174	0.564
12	0.746	0.857	0.993	0.995	0.481
13	0.650	0.697	0.877	0.848	0.582
14	0.723	0.686	0.714	0.577	0.512
15	0.588	0.543	0.473	0.538	0.512
16	0.625	0.551	0.505	0.457	
17	0.620	0.751	0.422	0.400	
18	0.618	0.708	0.446	0.309	
19	0.252	0.246	0.344	0.228	

c_A	0.949	1.020	1.068	1.053	0.926
c_m	-0.1189	-0.1196	-0.1314	-0.1172	-0.1159
c_b					
C_N'	0.982	$x'_{cp} = 36.6$	$y'_{cp} = 43.2$		
C_m'	-0.1140				
C_b'	.424				
C_N'	1.050	$x'_{cp} = 37.0$	$y'_{cp} = 43.1$		
C_m'	-0.1260				
C_b'	.452				

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TABLE XII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$[M \approx 1.01]$

(a) $M = 1.02$ $\alpha = 2.5^\circ$
 $c_{NA} = 0$ $\delta_{aL} = 0.1^\circ$ up

Orifice	Row					Row
	1	2	3	4	5	
1	0.059	0.103	0.152	0.249	0.068	1
2	0.050	0.132	0.076	0.222	0.101	2
3	0.073	0.132	0.005	0.229	0.044	3
4	0.031	0.093	-	0.015	0.174	4
5	0.000	-	0.024	-	0.038	5
6	0.010	-	0.005	-	0.024	6
7	0.010	-	0.005	-	0.020	7
8	-	0.015	-	0.005	-	8
9	-	0.031	0.004	-	0.011	9
10	-	0.029	0.030	-	0.026	10
11	-	0.027	0.035	-	0.026	11
12	-	0.051	0.004	-	0.041	12
13	-	0.010	-	0.004	-	13
14	-	0.148	0.117	-	0.059	14
15	-	0.059	0.041	-	0.011	15
16	-	0.092	-	0.025	-	16
17	-	0.027	-	0.067	-	17
18	-	0.061	-	0.086	-	18
19	-	0.040	-	0.019	-	19

Orifice	Row					Row
	1	2	3	4	5	
c_n	0.031	0.033	0.045	0.026	-0.017	c_n
c_m	-0.0137	-	-0.0072	-	-0.0114	c_m
c_b	$c_N' = 0.026$	$x'_{cp} = 37.1$	$y'_{cp} = 32.8$.0082	.0104	$c_N' = 0.064$
	$c_m' = -0.0032$					$c_m' = -0.0071$
	$c_b' = .009$					$c_b' = .023$
						$x'_{cp} = 36.1$
						$y'_{cp} = 35.9$

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TABLE XII.-- Continued.

[$M \approx 1.01$]

(c) $M = 1.02$
 $C_{NA} = 0.10$
 $\alpha = 3.1^\circ$
 $\delta_{a_L} = 0.9^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.512	0.551	0.977	1.076	0.728	1	0.697	0.980	1.116	1.215	0.829
2	0.294	0.324	0.506	0.804	0.643	2	0.432	0.629	0.846	0.935	0.762
3	0.266	0.334	0.190	0.417	0.029	3	0.367	0.401	0.667	0.833	0.485
4	0.213	0.249	0.155	0.331	-	4	0.289	0.312	0.300	0.681	- 0.018
5	0.163	0.155	0.057	0.223	-	5	0.211	0.189	0.119	0.351	- 0.022
6	0.140	0.123	0.124	0.015	0.018	6	0.207	0.177	0.161	0.072	- 0.036
7	0.125	0.121	0.122	0.039	0.052	7	0.158	0.169	0.175	0.145	0.011
8	0.106	0.109	0.282	0.222	0.055	8	0.178	0.168	0.315	0.276	0.048
9	0.065	0.089	0.138	0.052	0.026	9	0.123	0.149	0.183	0.093	0.088
10	0.139	0.167	0.161	0.111	-	10	0.207	0.219	0.245	0.144	0.000
11	0.096	0.164	0.223	0.132	-	11	0.141	0.230	0.311	0.158	- 0.011
12	0.129	0.145	0.115	0.106	-	12	0.193	0.208	0.177	0.150	- 0.022
13	0.106	0.056	0.089	0.108	-	13	0.145	0.086	0.107	0.119	- 0.105
14	0.228	0.172	0.137	0.073	-	14	0.261	0.205	0.171	0.084	- 0.052
15	0.127	0.070	0.007	-	0.088	15	0.149	0.140	0.000	- 0.061	- 0.087
16	0.154	0.036	0.044	-	0.137	16	0.190	0.065	0.033	- 0.126	
17	0.096	0.107	0.103	-	0.066	17	0.130	0.129	0.088	- 0.048	
18	0.118	0.130	0.154	-	0.101	18	0.143	0.141	0.146	- 0.075	
19	- 0.087	0.066	0.065	-	0.004	19	-	0.094	0.073	- 0.015	

(d) $M = 1.02$
 $C_{NA} = 0.16$
 $\alpha = 3.7^\circ$
 $\delta_{a_L} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.697	0.980	1.116	1.215	0.829	1	0.432	0.629	0.846	0.935	0.762
2	0.367	0.401	0.333	0.485	-	2	0.367	0.401	0.667	0.833	-
3	0.289	0.312	0.300	0.681	-	3	0.289	0.312	0.300	0.681	- 0.018
4	0.211	0.189	0.119	0.351	-	4	0.211	0.189	0.119	0.351	- 0.022
5	0.177	0.177	0.161	0.072	-	5	0.177	0.177	0.161	0.072	- 0.036
6	0.158	0.169	0.175	0.145	-	6	0.158	0.169	0.175	0.145	0.011
7	0.178	0.168	0.276	0.048	-	7	0.178	0.168	0.276	0.048	
8	0.123	0.149	0.093	0.088	-	8	0.123	0.149	0.093	0.088	
9	0.207	0.219	0.144	0.000	-	9	0.207	0.219	0.144	0.000	
10	0.141	0.230	0.158	-	0.011	10	0.141	0.230	0.158	- 0.011	
11	0.193	0.208	0.150	-	0.022	11	0.193	0.208	0.150	- 0.022	
12	0.145	0.145	0.150	-	0.105	12	0.145	0.145	0.150	- 0.105	
13	0.261	0.205	0.084	-	0.052	13	0.261	0.205	0.084	- 0.052	
14	0.149	0.140	0.061	-	0.087	14	0.149	0.140	0.061	- 0.087	
15	0.190	0.065	0.126	-	0.105	15	0.190	0.065	0.126	- 0.105	
16	0.130	0.129	0.088	-	0.048	16	0.130	0.129	0.088	- 0.048	
17	0.143	0.141	0.146	-	0.075	17	0.143	0.141	0.146	- 0.075	
18	0.094	0.073	0.015	-	0.015	18	0.094	0.073	0.015	- 0.015	
19	-	-	-	-	-	19	-	-	-	-	

$$\begin{aligned} C_N' &= 0.136 \\ C_m' &= -0.0080 \\ C_b' &= .054 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 30.9 \\ y'_{cp} &= 39.5 \end{aligned}$$

$$\begin{aligned} C_N' &= 0.198 \\ C_m' &= -.0106 \\ C_b' &= .080 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 30.4 \\ y'_{cp} &= 40.6 \end{aligned}$$

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TABLE XII.- Continued.
 $[M \approx 1.01]$

(e) $M = 1.02$
 $C_{NA} = 0.21$
 $\alpha = 4.1^\circ$
 $\delta_{a_L} = 1.0^\circ$ up

(f) $M = 1.02$
 $C_{NA} = 0.25$
 $\alpha = 4.7^\circ$
 $\delta_{a_L} = 1.2^\circ$ up

Orifice	Row					Orifice	Row					
	1	2	3	4	5		1	2	3	4	5	
1	0.785	1.097	1.209	1.279	0.916	1	0.840	1.174	1.281	1.326	0.983	
2	•537	•900	•946	1.009	•848	2	•609	1.016	1.027	1.116	•925	
3	•460	•619	•794	•906	•554	3	•563	•857	•863	•969	•633	
4	•375	•375	•640	•775	•206	4	•464	•519	•728	•870	•287	
5	•288	•242	•185	•674	•100	5	•339	•313	•288	•760	•229	
6	•265	•221	•200	•174	-	6	•326	•284	•279	•409	•183	
7	•197	•218	•209	•213	•011	7	•244	•260	•238	•366	•045	
8	•206	•197	•339	•316	•044	8	•253	•241	•366	•373	•095	
9	•165	•182	•220	•111	•103	9	•222	•240	•249	•173	•081	
10	•260	•271	•311	•215	•004	10	•298	•355	•382	•317	-	
11	•195	•300	•367	•245	-	11	•270	•329	•399	•289	-	
12	•222	•287	•229	•179	-	12	•246	•341	•272	•178	-	
13	•172	•101	•170	•119	-	13	•201	•123	•209	•130	-	
14	•280	•217	•202	•099	-	14	•293	•245	•212	•091	-	
15	•193	•165	•063	•057	-	15	•210	•201	•092	•068	-	
16	•220	•101	•022	-	•115	16	•237	•129	•033	•114	-	
17	•161	•154	•085	-	•073	17	•194	•220	•084	•069	-	
18	•175	•168	•128	-	•075	18	•231	•189	•135	•093	-	
19	- •065	•092	•069	-	•019	19	-	•047	•099	•053	-	
c_n	0.248	0.271	0.303	0.252	0.168	c_n	0.291	0.327	0.345	0.306	0.209	
c_m	- •0389	- •0291	-	•0229	.0129	.0228	c_m	- •0451	- •0353	- •0268	- •0134	.0267
c_b	$C_N' = 0.249$ $C_m' = - .0140$ $C_b' = .102$						$C_N' = 0.297$ $C_m' = - .0174$ $C_b' = .123$					
								$x'_{cp} = 30.6$ $y'_{cp} = 41.0$				
								$x'_{cp} = 30.8$ $y'_{cp} = 41.2$				

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TABLE XIII.- Continued.
 $[M \approx 1.01]$

(g) $M = 1.02$
 $c_{N_A} = 0.31$
 $\alpha = 5.1^\circ$
 $\delta_{a_L} = 1.2^\circ$ up

(h) $M = 1.02$
 $c_{N_A} = 0.24$
 $\alpha = 5.5^\circ$
 $\delta_{a_L} = 1.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.076	1.279	1.372	1.407	1.088	1	1.178	1.344	1.434	1.475	1.126
2	.717	1.121	1.105	1.203	1.001	2	.781	1.174	1.155	1.256	1.039
3	.674	.953	.974	1.079	.715	3	.722	1.010	1.022	1.127	.749
4	.570	.921	.829	.987	.366	4	.636	.950	.877	1.026	.412
5	.439	.395	.614	.840	.317	5	.487	.472	.680	.882	.350
6	.427	.352	.482	.490	.269	6	.460	.382	.633	.538	.294
7	.344	.323	.354	.538	.306	7	.377	.366	.431	.591	.350
8	.315	.309	.423	.599	.124	8	.353	.338	.451	.643	.219
9	.279	.344	.331	.258	.081	9	.341	.395	.394	.420	.095
10	.390	.395	.440	.416	-.044	10	.404	.410	.458	.434	-.037
11	.338	.381	.446	.338	-.067	11	.372	.412	.476	.375	-.052
12	.285	.378	.305	.203	-.075	12	.299	.400	.316	.318	-.075
13	.237	.164	.253	.152	-.115	13	.260	.190	.275	.167	-.115
14	.326	.267	.273	.109	-.066	14	.340	.279	.307	.109	-.055
15	.242	.230	.126	-.042	-.083	15	.257	.238	.140	-.042	-.075
16	.269	.165	.095	-.125	16	.269	.190	.128	-.125	-.125	
17	.225	.252	.106	-.058	17	.240	.278	.106	-.047	-.047	
18	.241	.256	.145	-.075	18	.259	.282	.153	-.067	-.067	
19	-.025	.106	.053	-.060	19	-.014	.110	.057	-.049	-.049	
c_n	0.358	0.402	0.417	0.376	0.289	c_n	0.389	0.431	0.453	0.410	0.321
c_m	-.0508	-.0406	-.0341	.0086	.0181	c_m	-.0528	-.0445	-.0378	.0064	.0124

$c_N' = 0.368$
 $c_m' = -.0229$
 $c_b' = .153$

$x'_{cp} = 31.2$
 $y'_{cp} = 41.7$

$x'_{cp} = 31.6$
 $y'_{cp} = 41.9$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.178	1.344	1.434	1.475	1.126	2	.781	1.174	1.155	1.256	1.039
2	.722	1.010	1.022	1.127	.749	3	.636	.950	.877	1.026	.412
3	.636	.950	.877	1.026	.412	4	.487	.472	.680	.882	.350
4	.487	.472	.680	.882	.350	5	.394	.395	.394	.420	.095
5	.394	.395	.394	.420	.095	6	.460	.382	.633	.538	.294
6	.460	.382	.633	.538	.294	7	.377	.366	.431	.591	.350
7	.377	.366	.431	.591	.350	8	.353	.338	.451	.643	.219
8	.353	.338	.451	.643	.219	9	.341	.395	.394	.420	.095
9	.341	.395	.394	.420	.095	10	.404	.410	.458	.434	-.037
10	.404	.410	.458	.434	-.037	11	.372	.412	.476	.375	-.052
11	.372	.412	.476	.375	-.052	12	.299	.400	.316	.318	-.075
12	.299	.400	.316	.318	-.075	13	.260	.190	.275	.167	-.115
13	.260	.190	.275	.167	-.115	14	.340	.279	.307	.109	-.055
14	.340	.279	.307	.109	-.055	15	.257	.238	.140	-.042	-.075
15	.257	.238	.140	-.042	-.075	16	.269	.190	.128	-.125	-.125
16	.269	.190	.128	-.125	-.125	17	.240	.278	.106	-.047	-.047
17	.240	.278	.106	-.047	-.047	18	.259	.282	.153	-.067	-.067
18	.259	.282	.153	-.067	-.067	19	-.014	.110	.057	-.049	-.049
19	-.014	.110	.057	-.049	-.049	20	.014	.014	.014	.014	.014

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TABLE XII.—Continued.

$$\begin{array}{ll} \text{(1) } M = 1.02 & \alpha = 6.6^\circ \\ C_{N_A} = 0.40 & \delta_{a_L} = 1.0^\circ \text{ up} \\ \\ \text{(j) } M = 1.02 & \alpha = 6.0^\circ \\ C_{N_A} = 0.47 & \delta_{a_L} = 1.1^\circ \text{ up} \end{array}$$

Orifice	Row					c_n	c_m	c_b	$\frac{x'_n c_p}{y'_m c_p}$	$\frac{33.3}{42.8}$
	1	2	3	4	5					
1	1.0541	1.0697	1.0691	1.0702	1.0702	0.530	-0.0690	-0.0614	-0.0569	-0.0557
2	1.0064	1.0433	1.0405	1.0491	1.0275					
3	0.960	1.0302	1.0266	1.0354	0.969					
4	0.870	1.0176	1.0128	1.0262	0.607					
5	0.704	0.811	0.899	1.0975	0.497					
6	0.646	0.608	0.884	0.763	0.472					
7	0.554	0.539	0.790	0.769	0.487					
8	0.519	0.507	0.839	0.857	0.381					
9	0.492	0.556	0.605	0.694	0.329					
10	0.537	0.575	0.586	0.746	0.154					
11	0.500	0.510	0.601	0.691	0.195					
12	0.380	0.476	0.415	0.330	0.148					
13	0.334	0.323	0.353	0.248	-0.008					
14	0.455	0.326	0.403	0.179	0.054					
15	0.317	0.310	0.236	0.012	-0.039					
16	0.361	0.300	0.198	-0.046						
17	0.310	0.386	0.242	-0.011						
18	0.337	0.391	0.232	-0.035						
19	0.041	0.126	0.004	-0.063						

$$\begin{array}{ll} C_N = 0.465 & x'_{cp} = 32.5 \\ C_M = -0.0351 & y'_{cp} = 42.5 \\ C_B = .198 \end{array}$$

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TABLE XII.-- Continued.
[$M \approx 1.0$]

(k) $M = 1.01$
 $C_{NA} = 0.54$
 $\alpha = 7.2^\circ$
 $\delta_{a,L} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.676	1.702	1.771	1.813	1.445	1	1.748	1.775	1.812	1.859	1.495
2	1.219	1.547	1.480	1.576	1.357	2	1.318	1.608	1.564	1.627	1.392
3	1.080	1.415	1.358	1.467	1.044	3	1.161	1.486	1.404	1.508	1.095
4	•989	1.252	1.234	1.345	•696	4	1.042	1.298	1.300	1.402	•760
5	•790	1.021	•996	1.188	•560	5	•866	1.102	1.026	1.228	•606
6	•728	•701	•981	•846	•517	6	•778	•789	1.051	•912	•578
7	•629	•640	•868	•882	•542	7	•695	•696	•929	•922	•597
8	•619	•579	•941	•931	•434	8	•664	•641	1.001	•973	•457
9	•573	•635	•728	•785	•374	9	•641	•674	•853	•824	•397
10	•579	•639	•664	•822	•202	10	•609	•681	•713	•857	•225
11	•556	•559	•653	•780	•232	11	•584	•580	•680	•823	•228
12	•432	•519	•469	•505	•200	12	•462	•539	•504	•593	•224
13	•368	•377	•398	•320	•156	13	•399	•381	•445	•410	•182
14	•486	•364	•439	•192	•202	14	•501	•376	•453	•230	•241
15	•354	•347	•296	•056	•060	15	•377	•343	•327	•064	•171
16	•388	•329	•235	-	•043	16	•411	•355	•254	•004	
17	•349	•412	•271	•015	-	17	•377	•447	•298	•027	
18	•370	•426	•283	-	•016	18	•377	•441	•302	•012	
19	•065	•131	•004	-	•071	19	•084	•162	•000	-	•083
c_n	0.595	0.645	0.693	0.655	0.570	c_n	0.633	0.684	0.738	0.701	0.613
c_m	-0.0753	-0.0693	-0.0675	-0.0265	-0.0422	c_m	-0.0791	-0.0726	-0.0735	-0.0362	-0.0509

(1) $M = 1.01$
 $C_{NA} = 0.58$
 $\alpha = 7.5^\circ$
 $\delta_{a,L} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.702	1.771	1.813	1.445	1	1.748	1.775	1.812	1.859	1.495	
2	1.547	1.480	1.576	1.357	2	1.318	1.608	1.564	1.627	1.392	
3	1.415	1.358	1.467	1.044	3	1.161	1.486	1.404	1.508	1.095	
4	•989	1.252	1.234	1.345	4	1.042	1.298	1.300	1.402	•760	
5	•790	1.021	•996	1.188	5	•866	1.102	1.026	1.228	•606	
6	•728	•701	•981	•846	6	•778	•789	1.051	•912	•578	
7	•629	•640	•868	•882	7	•695	•696	•929	•922	•597	
8	•619	•579	•941	•931	8	•664	•641	1.001	•973	•457	
9	•573	•635	•728	•785	9	•641	•674	•853	•824	•397	
10	•579	•639	•664	•822	10	•609	•681	•713	•857	•225	
11	•556	•559	•653	•780	11	•584	•580	•680	•823	•228	
12	•432	•519	•469	•505	12	•462	•539	•504	•593	•224	
13	•368	•377	•398	•320	13	•399	•381	•445	•410	•182	
14	•486	•364	•439	•192	14	•501	•376	•453	•230	•241	
15	•354	•347	•296	•056	15	•377	•343	•327	•064	•171	
16	•388	•329	•235	-	16	•411	•355	•254	•004		
17	•349	•412	•271	•015	17	•377	•447	•298	•027		
18	•370	•426	•283	-	18	•377	•441	•302	•012		
19	•065	•131	•004	-	19	•084	•162	•000	-	•083	

$x'_{cp} = 33.6$
 $y'_{cp} = 42.4$
 $C_N' = 0.611$
 $C_m' = -0.0527$
 $C_b' = .259$

$x'_{cp} = 34.2$
 $y'_{cp} = 43.1$
 $C_N' = 0.660$
 $C_m' = -.0605$
 $C_b' = .284$

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TABLE XII.- Continued.
 $[M \approx 1.01]$

(m) $M = 1.01$
 $C_{NA} = 0.62$ $\alpha = 8.1^\circ$
 $\delta_{a_L} = 1.1^\circ$ up

(n) $M = 1.00$
 $C_{NA} = 0.73$ $\alpha = 9.3^\circ$
 $\delta_{a_L} = 1.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.856	1.839	1.885	1.931	1.560	1	1.997	2.004	2.046	2.073	1.687
2	1.379	1.694	1.621	1.693	1.461	2	1.529	1.853	1.774	1.844	1.607
3	1.230	1.556	1.464	1.573	1.152	3	1.385	1.730	1.627	1.716	1.302
4	1.123	1.388	1.364	1.473	.814	4	1.295	1.588	1.505	1.623	.975
5	1.952	1.170	1.087	1.300	.680	5	1.144	1.330	1.223	1.428	.821
6	1.854	.887	1.117	.983	.635	6	1.000	1.199	1.244	1.136	.756
7	1.754	.756	1.012	.989	.640	7	.899	.959	.959	1.161	.737
8	1.734	.707	1.072	1.041	.494	8	.899	.845	1.204	1.182	.581
9	1.690	.733	.957	.887	.435	9	.844	.877	1.089	1.010	.525
10	.650	.729	.799	.921	.254	10	.755	.834	1.043	1.043	.328
11	.616	.632	.731	.888	.281	11	.719	.741	.872	.984	.356
12	.499	.573	.530	.651	.253	12	.583	.654	.645	.754	.299
13	.429	.430	.479	.527	.218	13	.489	.510	.569	.639	.320
14	.535	.406	.492	.286	.278	14	.603	.591	.475	.367	
15	.414	.368	.361	.108	.212	15	.476	.426	.435	.336	.303
16	.436	.372	.302	.023		16	.487	.441	.410	.217	
17	.408	.485	.327	.062		17	.468	.567	.373	.171	
18	.417	.475	.324	.032		18	.470	.543	.350	.064	
19	.111	.174	.008	-.072		19	.127	.188	.045	-.008	
c_n	0.684	0.736	0.794	0.760	0.662	c_n	0.792	0.862	0.921	0.891	0.773
c_m	-.0857	-.0788	-.0825	-.0467	-.0599	c_m	-.0994	-.0945	-.1054	-.0755	-.0793

$C_N' = 0.712$
 $C_m' = -.0680$
 $C_b' = .307$

$x'_{cp} = 24.6$
 $y'_{cp} = 43.1$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.997	2.004	2.046	2.073	1.687	1	1.529	1.853	1.774	1.844	1.607
2	1.529	1.853	1.774	1.844	1.607	2	1.385	1.730	1.627	1.716	1.302
3	1.385	1.730	1.627	1.716	1.302	3	1.295	1.588	1.505	1.623	.975
4	1.295	1.588	1.505	1.623	.975	4	1.144	1.330	1.223	1.428	.821
5	1.144	1.330	1.223	1.428	.821	5	1.000	1.199	1.244	1.136	.756
6	1.000	1.199	1.244	1.136	.756	6	.899	.959	1.121	1.121	.737
7	.899	.959	1.121	1.121	.737	7	.899	.845	1.204	1.182	.581
8	.899	.845	1.204	1.182	.581	8	.844	.877	1.089	1.010	.525
9	.844	.877	1.089	1.010	.525	9	.755	.834	1.043	1.043	.328
10	.755	.834	1.043	1.043	.328	10	.719	.741	.872	.984	.356
11	.719	.741	.872	.984	.356	11	.583	.654	.645	.754	.299
12	.583	.654	.645	.754	.299	12	.489	.510	.569	.639	.320
13	.489	.510	.569	.639	.320	13	.428	.450	.491	.547	.299
14	.428	.450	.491	.547	.299	14	.377	.409	.450	.507	.299
15	.377	.409	.450	.507	.299	15	.326	.358	.409	.467	.299
16	.326	.358	.409	.467	.299	16	.275	.307	.358	.416	.299
17	.275	.307	.358	.416	.299	17	.224	.256	.307	.365	.299
18	.224	.256	.307	.365	.299	18	.173	.205	.256	.314	.299
19	.173	.205	.256	.314	.299	19	.122	.154	.205	.263	.299

$C_N' = 0.831$
 $C_m' = -.0866$
 $C_b' = .359$

$x'_{cp} = 35.4$
 $y'_{cp} = 43.2$

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TABLE XII. - Concluded.

$$\delta_{a_L}^a = \frac{1.1^\circ}{9.7^\circ} \text{ up}$$

Orifice	Row					C _N C _m C _b
	1	2	3	4	5	
1	2.005	2.039	2.048	2.099	1.704	
2	1.549	1.842	1.796	1.865	1.619	
3	1.447	1.761	1.645	1.743	1.330	
4	1.320	1.596	1.545	1.636	.991	
5	1.189	1.367	1.241	1.468	.856	
6	1.037	1.254	1.276	1.161	.779	
7	937	1.012	1.175	1.141	.762	
8	927	.890	1.247	1.207	.599	
9	.852	.896	1.109	1.038	.544	
10	.774	.861	1.086	1.063	.342	
11	.729	.771	.933	.998	.374	
12	.605	.660	.683	.774	.314	
13	.489	.534	.600	.657	.358	
14	.633	.529	.615	.499	.381	
15	.488	.428	.460	.367	.330	
16	.511	.454	.443	.284		
17	.482	.586	.360	.215		
18	.486	.555	.307	.110		
19	.141	.197	.068	.020		
c _n	0.813	0.885	0.949	0.919	0.796	
c _m	-1.035	-0.981	-1.100	-0.833	-0.850	
C _N C _m C _b	0.855 -0.914 .370					x' _{cp} = 25.7 y' _{cp} = 43.2

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TABLE XIII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$[M \approx 1.10]$

(a) $M = 1.10$ $\alpha = 2.7^\circ$
 $c_{NA} = 0.03$ $\delta_{aL} = 0.2^\circ$ up

(b) $M = 1.10$ $\alpha = 2.7^\circ$
 $c_{NA} = 0.05$ $\delta_{aL} = 0.4^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.244	0.144	0.649	0.125	1	0.306	0.199	0.768	0.817	0.456	
2	*133	*196	*112	*215	2	*188	*208	*159	*316	*190	
3	*083	*171	*038	*255	3	*166	*208	*101	*275	*084	
4	*061	*168	*017	*268	4	*079	*184	*067	*255	*050	
5	*004	*042	-0.020	*119	5	*050	*062	*004	*159	-	
6	*033	*017	*045	-0.050	6	*062	*051	*049	-	*042	-0.003
7	*033	-	*038	*059	7	*066	-	*004	*075	*000	*013
8	*025	*017	*017	*169	8	*041	*034	*177	*093	*009	
9	-	*023	*006	*042	9	*013	*099	*061	-	*003	-0.019
10	*052	*048	-	*003	10	*071	*080	*025	-	*045	*000
11	*016	*069	*099	*036	11	*046	*105	*134	*055	-	*036
12	*068	*093	*061	-	12	*099	*115	*076	*009	-	*019
13	*054	-	*010	*041	13	*071	*010	*057	*029	-	*041
14	*162	*126	*118	*092	14	*183	*128	*127	*113	-	*041
15	*044	*079	*026	-0.013	15	*056	*092	*045	*007	-	*065
16	*114	*009	*003	-0.080	16	*132	*012	*006	-	*067	
17	*043	*079	*070	-	17	*069	*089	*070	-	*016	
18	*071	*074	*101	-0.045	18	*074	*080	*113	-	*036	
19	-	*053	*038	*076	19	-	*044	*082	-	*006	
c_n	0.059	0.063	0.080	0.053	-0.015	c_n	0.083	0.085	0.102	0.076	0.010
c_m	-0.0159	-0.0115	-0.0104	.0096	.0091	c_m	-0.0194	-0.0147	-0.0122	.0078	.0114
c_b	0.052	$x'_{cp} = 33.4$	$y'_{cp} = 35.1$			c_n'	0.075				
						c_m'	-0.0066				
						c_b'	.028				
						x'_{cp}	33.9				
						y'_{cp}	37.6				

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TABLE XIII.- Continued.

 $[M \approx 1.10]$

(c) $M = 1.10$
 $C_{NA} = 0.09$
 $\alpha = 2.8^\circ$
 $\delta_{aL} = 0.2^\circ$ up

(d) $M = 1.10$
 $C_{NA} = 0.15$
 $\alpha = 3.3^\circ$
 $\delta_{aL} = 0.2^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.389	0.611	0.853	0.910	0.591	1	0.541	0.766	0.962	1.046	0.695
2	•268	•311	•532	•659	•546	2	•399	•582	•675	•790	•663
3	•232	•257	•205	•544	•054	3	•347	•442	•536	•711	•377
4	•161	•217	•129	•334	-	4	•264	•308	•434	•598	•031
5	•107	•087	•041	•183	-	5	•197	•153	•118	•494	•013
6	•107	•084	•090	-	•012	6	•189	•176	•134	•078	- •015
7	•066	•062	•096	•017	•006	7	•143	•141	•154	•066	- •006
8	•062	•055	•205	•157	•009	8	•115	•118	•253	•223	•003
9	•073	•064	•096	•035	-	9	•125	•136	•140	•076	- •016
10	•116	•121	•060	•067	•016	10	•173	•181	•150	•129	•019
11	•098	•143	•159	•065	-	11	•156	•184	•241	•100	- •010
12	•104	•166	•133	•019	-	12	•168	•251	•193	•059	•003
13	•082	•026	•085	•032	-	13	•116	•080	•151	•073	- •019
14	•205	•150	•144	•138	-	14	•232	•169	•179	•147	- •022
15	•093	•110	•054	•020	-	15	•137	•138	•095	•032	- •019
16	•157	•031	•013	-	•038	16	•187	•071	•078	-	•044
17	•095	•104	•066	-	•006	17	•137	•144	•066	•006	
18	•110	•093	•106	-	•016	18	•143	•121	•112	-	
19	-	•022	•044	•085	-	19	-	•009	•082	•078	•006

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.541	0.766	0.962	1.046	0.695	2	•399	•582	•675	•790	•663
2	•347	•442	•536	•711	•377	3	•264	•308	•434	•598	•031
3	•197	•153	•118	•494	•013	4	•189	•176	•134	•078	- •015
4	•176	•134	•100	-		5	•141	•154	•193	•059	•003
5	•125	•136	•116	•140	•076	6	•125	•136	•140	•129	•019
6	•173	•181	•150	•121	•095	7	•156	•184	•241	•100	- •010
7	•115	•118	•112	•129	•096	8	•168	•251	•193	•059	•003
8	•125	•136	•116	•140	•076	9	•125	•136	•140	•129	•019
9	•173	•181	•150	•121	•095	10	•137	•138	•105	•059	•003
10	•173	•181	•150	•121	•095	11	•156	•184	•241	•100	- •010
11	•168	•251	•193	•059	•003	12	•168	•251	•193	•059	•003
12	•116	•080	•151	•073	- •019	13	•116	•080	•151	•073	- •019
13	•125	•136	•116	•140	•076	14	•136	•147	•177	•147	- •022
14	•173	•181	•150	•121	•095	15	•137	•138	•105	•059	•003
15	•137	•138	•105	•059	•003	16	•187	•071	•078	-	•044
16	•187	•071	•078	-		17	•137	•144	•066	•006	
17	•137	•144	•066	•006		18	•143	•121	•112	-	
18	•143	•121	•112	-		19	-	•009	•082	•078	•006

$c_n = 0.121$	0.127	0.144	0.120	0.045	$c_n = 0.181$	0.196	0.221	0.187	0.103
$c_m = .0244$.0164	.0136	.0073	.0147	$c_m = -0.314$	-.0232	-.0269	.0071	.0184
$c_b = .045$									
$C_N' = 0.114$					$C_N' = 0.180$				
$C_m' = -.0079$					$C_m' = -.0123$				
$C_b' = .045$					$C_b' = .073$				
					$x_{cp}' = \frac{31.9}{40.7}$				
					$y_{cp}' = \frac{39.4}{40.7}$				

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TABLE XIII.- Continued.

$$\begin{aligned}(\bullet) \quad M &= 1.10 & \alpha &= 4.1^{\circ} \\ C_{N_A} &= 0.20 & \delta_{a_L} &= 0.2^{\circ} \text{ up} \\ (\dagger) \quad M &= 1.10 & \alpha &= 4.5^{\circ} \\ C_{N_A} &= 0.24 & \delta_{a_L} &= 0.4^{\circ} \end{aligned}$$

Orifice	Row					c_m	c_n	c_b	CN'	$x'_1 c_p = 32.8$	
	1	2	3	4	5					$y'_1 c_p = 41.5$	
1	0.802	0.973	1.091	1.188	0.862						
2	•552	•812	•849	•943	•776						
3	•501	•734	•723	•850	•494						
4	•430	•591	•608	•737	•232						
5	•301	•304	•383	•660	•198						
6	•290	•254	•302	•320	•144						
7	•248	•255	•240	•295	•127						
8	•212	•213	•348	•431	•043						
9	•212	•205	•219	•157	•000						
10	•251	•280	•258	•226	•031						
11	•259	•284	•346	•189	•000						
12	•225	•335	•264	•152	•022						
13	•185	•168	•222	•152	—						
14	•293	•215	•268	•171	•019						
15	•188	•178	•129	•042	—						
16	•230	•131	•137	—	•035						
17	•185	•206	•138	•000							
18	•197	•199	•130	—	•003						
19	•018	•128	•081	—	•003						

$c_N' = 0.230$	$x'_1 \text{cp} = 32.6$	$c_N' = 0.276$	$x'_1 \text{cp} = 32.8$
$c_m' = -0.0176$	$y'_1 \text{cp} = 41.3$	$c_m' = -0.0216$	$y'_1 \text{cp} = 41.5$
$c_b' = .095$		$c_b' = .115$	

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TABLE XIII.- Continued.

 $[M \approx 1.10]$
 $(g) M = 1.10$
 $c_{N_A} = 0.31$
 $\alpha = 5.2^\circ$
 $\delta_{a_L} = 0.4^\circ \text{ up}$
 $(h) M = 1.10$
 $c_{N_A} = 0.34$
 $\alpha = 5.5^\circ$
 $\delta_{a_L} = 0.5^\circ \text{ up}$

Orifice	Row				
	1	2	3	4	5
1	1.041	1.117	1.234	1.277	0.960
2	.670	.996	.971	1.087	.906
3	.615	.836	.871	.969	.659
4	.546	.834	.727	.891	.351
5	.407	.419	.564	.756	.277
6	.400	.358	.539	.446	.217
7	.321	.324	.437	.467	.219
8	.309	.297	.445	.569	.202
9	.274	.268	.285	.339	.147
10	.335	.375	.366	.326	.075
11	.343	.369	.434	.326	.038
12	.291	.376	.326	.238	.029
13	.238	.251	.275	.205	.003
14	.327	.231	.317	.192	.047
15	.206	.215	.183	.068	-.019
16	.270	.186	.171	-.013	16
17	.224	.252	.191	.022	17
18	.227	.252	.198	.019	18
19	.068	.184	.091	-.016	19

Orifice	Row				
	1	2	3	4	5
1	1.131	1.187	1.291	1.350	1.028
2	.710	1.065	1.034	1.131	.961
3	.666	.880	.915	1.041	.693
4	.608	.903	.790	.944	.395
5	.461	.498	.614	.806	.328
6	.442	.422	.605	.684	.248
7	.355	.370	.513	.526	.255
8	.363	.335	.511	.604	.265
9	.307	.303	.336	.381	.238
10	.363	.420	.423	.440	.123
11	.389	.408	.479	.436	.099
12	.311	.396	.374	.251	.045
13	.264	.280	.313	.219	-.012
14	.359	.251	.329	.205	.047
15	.238	.222	.205	.065	-.013
16	.283	.214	.172	-.003	
17	.257	.281	.207	.040	
18	.248	.278	.220	.022	
19	.083	.206	.094	-.019	

 $c_m' = 0.360$
 $c_m' = -0.310$
 $c_b' = .152$
 $x'_{cp} = 23.6$
 $y'_{cp} = 42.2$
 $c_m' = 0.399$
 $c_m' = -.0360$
 $c_b' = .169$
 $x'_{cp} = 24.0$
 $y'_{cp} = 42.4$

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TABLE XIII.- Continued.

$$\left[M \approx 1.10 \right]$$

$$(I) \quad M = 1.10 \quad \delta_a = 6.2^{\circ} \quad \delta_{aL} = 0.66^{\circ} \text{ up}$$

$$(J) \quad M = 1.10 \quad C_{NA} = 0.45 \quad \delta_a = 6.6^{\circ} \quad \delta_{aL} = 0.66^{\circ} \text{ up}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.266	1.324	1.402	1.452	1.133	1	1.350	1.380	1.452	1.507	1.183
2	.809	1.182	1.138	1.251	1.045	2	.873	1.237	1.199	1.285	1.098
3	.770	1.022	1.037	1.147	.786	3	.808	1.109	1.083	1.197	.836
4	.708	.988	.908	1.047	.485	4	.756	1.018	.958	1.089	.528
5	.601	.668	.724	.901	.404	5	.675	.776	.769	.946	.442
6	.530	.532	.700	.580	.341	6	.563	.570	.761	.642	.378
7	.470	.450	.630	.621	.345	7	.540	.491	.672	.663	.412
8	.446	.412	.671	.689	.334	8	.475	.433	.732	.744	.346
9	.383	.386	.429	.458	.288	9	.446	.484	.544	.531	.310
10	.458	.516	.514	.627	.167	10	.480	.547	.561	.662	.180
11	.458	.472	.549	.601	.185	11	.481	.493	.569	.627	.189
12	.372	.447	.409	.339	.163	12	.394	.454	.429	.420	.179
13	.290	.331	.352	.254	.093	13	.318	.325	.380	.292	.133
14	.395	.283	.359	.221	.117	14	.407	.315	.383	.225	.174
15	.266	.257	.256	.094	.013	15	.291	.260	.279	.100	.084
16	.327	.327	.242	.203	.013	16	.334	.261	.225	.025	
17	.287	.313	.229	.065		17	.303	.335	.239	.072	
18	.285	.320	.255	.045		18	.289	.340	.265	.058	
19	.117	.238	.117	-.026		19	.142	.247	.124	-.029	
c_A	0.453	0.497	0.531	0.500	0.416	c_A	0.484	0.529	0.572	0.539	0.457
c_B	-0.0635	-0.0563	-0.0588	-0.0254	-.0267	c_B	-.0659	-.0597	-.0642	-.0308	-.0348
C_N'	0.473	$x'_{cp} = 24.6$	$y'_{cp} = 42.7$			$C_N' = 0.507$					
C_m'	-.0456					$C_m' = -.0500$					
C_b'	.202					$C_b' = .218$					

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$$x'_{cp} = 24.9$$

$$y'_{cp} = 42.9$$

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TABLE XIII.-- Continued.
[$M \approx 1.10$]

(k) $M = 1.10$ $\alpha = 7.6^\circ$
 $c_{N_A} = 0.50$ $\delta_{aL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.474	1.484	1.549	1.601	1.285	1	1.565	1.570	1.627	1.678	1.362
2	1.056	1.349	1.313	1.374	1.164	2	1.165	1.451	1.401	1.460	1.241
3	0.947	1.252	1.205	1.295	0.900	3	1.041	1.333	1.287	1.373	0.981
4	0.904	1.099	1.071	1.199	0.627	4	0.989	1.173	1.165	1.269	1.703
5	0.785	0.936	0.876	1.061	0.528	5	0.874	1.013	0.939	1.128	0.577
6	0.687	0.714	0.868	0.739	0.476	6	0.759	0.826	0.956	0.837	0.543
7	0.638	0.614	0.783	0.769	0.494	7	0.693	0.682	0.869	0.850	0.547
8	0.587	0.556	0.835	0.815	0.403	8	0.659	0.630	0.919	0.898	0.455
9	0.575	0.604	0.731	0.687	0.357	9	0.646	0.666	0.810	0.752	0.377
10	0.551	0.610	0.675	0.727	0.240	10	0.605	0.669	0.781	0.793	0.282
11	0.544	0.578	0.645	0.719	0.249	11	0.591	0.637	0.704	0.773	0.276
12	0.454	0.521	0.485	0.539	0.223	12	0.511	0.557	0.577	0.607	0.242
13	0.364	0.383	0.426	0.453	0.196	13	0.399	0.412	0.471	0.502	0.241
14	0.456	0.414	0.450	0.336	0.230	14	0.483	0.461	0.480	0.416	0.263
15	0.343	0.286	0.305	0.183	0.192	15	0.381	0.309	0.354	0.243	0.219
16	0.358	0.299	0.286	0.075	0.16	16	0.381	0.331	0.328	0.130	
17	0.351	0.398	0.268	0.134	0.17	17	0.378	0.441	0.313	0.160	
18	0.340	0.384	0.290	0.102	0.18	18	0.368	0.404	0.319	0.122	
19	0.168	0.286	0.137	-	0.007	19	0.178	0.306	0.130	-	0.013
c_n	0.568	0.614	0.658	0.630	0.531	c_n	0.622	0.671	0.722	0.695	0.583
c_m	-0.0751	-0.0721	-0.0768	-0.0497	-0.0501	c_m	-0.0820	-0.0790	-0.0865	-0.0610	-0.0578
c_b	0.590	$x'_{cp} = 35.7$	$y'_{cp} = 42.9$			c_{N_A}	0.647				
						c_a	-0.0628				
						c_b	-0.253				
						c_d	.278				

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(l) $M = 1.10$ $\alpha = 8.4^\circ$
 $c_{N_A} = 0.56$ $\delta_{aL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.474	1.484	1.549	1.601	1.285	1	1.565	1.570	1.627	1.678	1.362
2	1.056	1.349	1.313	1.374	1.164	2	1.165	1.451	1.401	1.460	1.241
3	0.947	1.252	1.205	1.295	0.900	3	1.041	1.333	1.287	1.373	0.981
4	0.904	1.099	1.071	1.199	0.627	4	0.989	1.173	1.165	1.269	1.703
5	0.785	0.936	0.876	1.061	0.528	5	0.874	1.013	0.939	1.128	0.577
6	0.687	0.714	0.868	0.739	0.476	6	0.759	0.826	0.956	0.837	0.543
7	0.638	0.614	0.783	0.769	0.494	7	0.693	0.682	0.869	0.850	0.547
8	0.587	0.556	0.835	0.815	0.403	8	0.659	0.630	0.919	0.898	0.455
9	0.575	0.604	0.731	0.687	0.357	9	0.646	0.666	0.810	0.752	0.377
10	0.551	0.610	0.675	0.727	0.240	10	0.605	0.669	0.781	0.793	0.282
11	0.544	0.578	0.645	0.719	0.249	11	0.591	0.637	0.704	0.773	0.276
12	0.454	0.521	0.485	0.539	0.223	12	0.511	0.557	0.577	0.607	0.242
13	0.364	0.383	0.426	0.453	0.196	13	0.399	0.412	0.471	0.502	0.241
14	0.456	0.414	0.450	0.336	0.230	14	0.483	0.461	0.480	0.416	0.263
15	0.343	0.286	0.305	0.183	0.192	15	0.381	0.309	0.354	0.243	0.219
16	0.358	0.299	0.286	0.075	0.16	16	0.381	0.331	0.328	0.130	
17	0.351	0.398	0.268	0.134	0.17	17	0.378	0.441	0.313	0.160	
18	0.340	0.384	0.290	0.102	0.18	18	0.368	0.404	0.319	0.122	
19	0.168	0.286	0.137	-	0.007	19	0.178	0.306	0.130	-	0.013
c_n	0.568	0.614	0.658	0.630	0.531	c_n	0.622	0.671	0.722	0.695	0.583
c_m	-0.0751	-0.0721	-0.0768	-0.0497	-0.0501	c_m	-0.0820	-0.0790	-0.0865	-0.0610	-0.0578
c_b	0.590	$x'_{cp} = 35.7$	$y'_{cp} = 42.9$			c_{N_A}	0.647				
						c_a	-0.0628				
						c_b	-0.253				
						c_d	.278				

$x'_{cp} = 35.9$
 $y'_{cp} = 43.0$

TABLE XIII.-- Continued.

 $[M \approx 1.10]$

(m) $M = 1.10$ $\alpha = 9.10^\circ$
 $c_{NA} = 0.61$ $\delta_{aL} = 0.7^\circ$ up
 $c_{NA} = 0.66$ $\alpha = 9.7^\circ$
 $\delta_{aL} = 0.8^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.647	1.652	1.700	1.742	1.438	1	1.728	1.745	1.815	1.497	
2	1.227	1.515	1.472	1.534	1.308	2	1.335	1.604	1.550	1.602	1.388
3	1.122	1.410	1.351	1.445	1.041	3	1.218	1.511	1.449	1.530	1.125
4	1.021	1.263	1.238	1.348	0.770	4	1.108	1.386	1.313	1.425	0.835
5	0.933	1.085	0.998	1.204	0.649	5	1.036	1.177	1.084	1.269	0.732
6	0.814	0.951	1.014	0.905	0.590	6	0.897	1.062	1.084	0.992	0.658
7	0.756	0.763	0.950	0.905	0.603	7	0.830	0.867	1.038	0.992	0.664
8	0.718	0.690	0.982	0.955	0.471	8	0.813	0.766	1.043	1.039	0.521
9	0.714	0.718	0.879	0.817	0.422	9	0.790	0.785	0.960	0.891	0.462
10	0.649	0.712	0.871	0.851	0.299	10	0.710	0.763	0.940	0.915	0.335
11	0.625	0.670	0.753	0.816	0.306	11	0.673	0.718	0.839	0.871	0.339
12	0.542	0.587	0.570	0.649	0.256	12	0.575	0.634	0.630	0.702	0.292
13	0.420	0.432	0.516	0.551	0.276	13	0.459	0.473	0.566	0.589	0.302
14	0.512	0.484	0.507	0.455	0.282	14	0.545	0.527	0.566	0.488	0.332
15	0.407	0.328	0.400	0.313	0.262	15	0.440	0.368	0.443	0.354	0.290
16	0.407	0.356	0.363	0.201	0.201	16	0.433	0.386	0.415	0.267	
17	0.409	0.460	0.352	0.205	0.205	17	0.437	0.513	0.385	0.315	
18	0.396	0.453	0.336	0.164	0.164	18	0.432	0.500	0.375	0.217	
19	0.181	0.318	0.110	0.010	0.010	19	0.200	0.310	0.111	0.043	
c_m	0.663	0.722	0.775	0.751	0.632	c_m	0.722	0.785	0.838	0.814	0.690
c_m	-0.0882	-0.0846	-0.0949	-0.0717	-0.0653	c_m	-0.0953	-0.0926	-0.1066	-0.0833	-0.0742
						$C_N^I = 0.696$	$x_{op}^I = 36.2$	$C_N^I = 0.756$	$x_{op}^I = 36.5$	$C_N^I = -0.0867$	$y_{op}^I = 43.1$
						$C_B^I = -0.0780$	$C_B^I = .300$	$C_B^I = .326$			

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TABLE XIII.- Continued.
 $[M \approx 1.10]$

$$(o) M = 1.09 \quad c_{N_A} = 0.70 \quad \alpha = 10.1^\circ \quad \delta_{aL} = 0.9^\circ \text{ up}$$

$$(p) M = 1.08 \quad c_{N_A} = 0.74 \quad \alpha = 10.6^\circ \quad \delta_{aL} = 0.9^\circ \text{ up}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.796	1.810	1.849	1.870	1.559	1	1.854	1.870	1.899	1.950	1.624
2	1.402	1.671	1.628	1.653	1.428	2	1.507	1.741	1.687	1.728	1.500
3	1.309	1.569	1.511	1.584	1.177	3	1.385	1.638	1.645	1.645	1.236
4	1.185	1.461	1.379	1.488	0.896	4	1.264	1.539	1.443	1.549	0.950
5	1.113	1.230	1.126	1.329	0.771	5	1.188	1.302	1.192	1.383	0.845
6	0.952	1.136	1.139	1.043	0.696	6	1.030	1.212	1.209	1.114	0.755
7	0.884	0.952	1.090	1.039	0.710	7	0.945	1.074	1.153	1.093	0.741
8	0.859	0.839	1.107	1.079	0.571	8	0.924	0.896	1.173	1.142	0.597
9	0.831	0.831	0.997	0.938	0.496	9	0.897	0.883	1.059	0.996	0.519
10	0.748	0.799	0.996	0.965	0.353	10	0.797	0.863	1.051	1.051	0.388
11	0.703	0.770	0.925	0.912	0.354	11	0.741	0.794	0.986	0.957	0.383
12	0.600	0.666	0.662	0.750	0.320	12	0.642	0.707	0.721	0.787	0.332
13	0.487	0.501	0.601	0.624	0.345	13	0.513	0.531	0.641	0.661	0.370
14	0.570	0.550	0.592	0.516	0.363	14	0.593	0.583	0.654	0.546	0.391
15	0.461	0.382	0.465	0.376	0.304	15	0.480	0.404	0.501	0.395	0.353
16	0.458	0.410	0.459	0.304	0.16	16	0.483	0.444	0.504	0.349	
17	0.469	0.535	0.416	0.387	0.17	17	0.485	0.567	0.415	0.432	
18	0.459	0.522	0.383	0.285	0.18	18	0.487	0.551	0.359	0.316	
19	0.224	0.318	0.115	0.070	0.19	19	0.251	0.319	0.136	0.127	
c_n	0.762	0.830	0.883	0.860	0.731	c_n	0.812	0.880	0.934	0.910	0.775
c_m	-1.003	-0.977	-1.139	-0.928	-0.0811	c_m	-1.060	-1.046	-1.222	-1.008	-0.0872

$$CN' = 0.799 \quad x'_{op} = 36.6 \quad x'_{op} = 36.8 \\ Cm' = -0.0929 \quad y'_{op} = 43.1 \quad y'_{op} = 43.1 \\ Cb' = .344 \quad Cn' = 0.847 \\ Cm' = -.0995 \quad Cb' = .365$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.854	1.870	1.899	1.950	1.624	2	1.507	1.687	1.728	1.500	
2	1.385	1.638	1.645	1.645	1.236	3	1.443	1.549	1.549	1.236	
3	1.264	1.539	1.539	1.539	1.236	4	1.192	1.383	1.383	1.236	
4	1.188	1.302	1.302	1.302	1.236	5	1.030	1.212	1.212	1.212	
5	1.030	1.212	1.212	1.212	1.212	6	0.945	1.074	1.153	1.153	
6	0.945	1.074	1.074	1.074	1.074	7	0.896	1.173	1.173	1.173	
7	0.896	1.173	1.173	1.173	1.173	8	0.883	1.059	1.059	1.059	
8	0.883	1.059	1.059	1.059	1.059	9	0.897	1.142	1.142	1.142	
9	0.897	1.142	1.142	1.142	1.142	10	0.797	0.863	0.863	0.863	
10	0.797	0.863	0.863	0.863	0.863	11	0.741	0.794	0.794	0.794	
11	0.741	0.794	0.794	0.794	0.794	12	0.642	0.707	0.707	0.707	
12	0.642	0.707	0.707	0.707	0.707	13	0.513	0.531	0.531	0.531	
13	0.513	0.531	0.531	0.531	0.531	14	0.593	0.583	0.583	0.583	
14	0.593	0.583	0.583	0.583	0.583	15	0.480	0.404	0.404	0.404	
15	0.480	0.404	0.404	0.404	0.404	16	0.483	0.444	0.444	0.444	
16	0.483	0.444	0.444	0.444	0.444	17	0.485	0.567	0.567	0.567	
17	0.485	0.567	0.567	0.567	0.567	18	0.487	0.551	0.551	0.551	
18	0.487	0.551	0.551	0.551	0.551	19	0.251	0.319	0.319	0.319	
19	0.251	0.319	0.319	0.319	0.319						

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TABLE XIII.- Continued.

 $[M \approx 1.10]$

(q) $M = 1.08$
 $c_{N_A} = 0.79$
 $\alpha = 11.4^\circ$
 $\delta_{aL} = 1.0^\circ$ up

(r) $M = 1.08$
 $c_{N_A} = 0.85$
 $\alpha = 12.2^\circ$
 $\delta_{aL} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.918	1.944	1.979	2.014	2.049	1	1.990	2.030	2.056	2.089	2.116
2	1.605	1.821	1.759	1.777	1.560	2	1.712	1.887	1.823	1.853	1.624
3	1.480	1.709	1.651	1.715	1.308	3	1.609	1.796	1.716	1.781	1.371
4	1.375	1.613	1.526	1.616	1.013	4	1.477	1.692	1.577	1.695	1.080
5	1.255	1.379	1.258	1.447	.926	5	1.355	1.446	1.341	1.531	1.010
6	1.105	1.281	1.280	1.198	.801	6	1.157	1.366	1.345	1.281	.862
7	1.015	1.214	1.212	1.160	.802	7	1.083	1.294	1.292	1.230	.852
8	.989	.972	1.256	1.211	.644	8	1.062	1.055	1.055	1.278	.691
9	.958	.951	1.129	1.055	.584	9	1.034	1.025	1.198	1.136	.648
10	.846	.911	1.097	1.069	.417	10	.913	.975	1.168	1.127	.470
11	.790	.860	1.038	1.007	.432	11	.834	.924	1.113	1.069	.473
12	.694	.744	.815	.850	.378	12	.728	.800	.914	.922	.407
13	.543	.578	.711	.722	.424	13	.583	.619	.783	.751	.473
14	.627	.603	.694	.575	.453	14	.665	.655	.761	.619	.500
15	.509	.456	.560	.455	.396	15	.549	.483	.615	.465	.437
16	.532	.466	.530	.374	.16	16	.563	.515	.538	.417	
17	.512	.610	.411	.467	.17	17	.557	.654	.385	.500	
18	.522	.591	.349	.348	.18	18	.554	.636	.355	.408	
19	.272	.335	.184	.185	.19	19	.303	.350	.244	.231	
c_a	0.868	0.935	0.992	0.965	0.835	c_a	0.925	0.997	1.052	1.026	0.893
c_m	-1.140	-1.123	-1.311	-1.102	-.0996	c_m	-1.218	-1.228	-1.422	-1.209	-.1105
c_b	0.901	$x'_{cp} = 37.0$	$y'_{cp} = 43.1$				$c_N' = 0.959$	$x'_{cp} = 37.3$			
		$c_m' = -1.078$	$c_b' = .388$				$c_m' = -.1176$	$c_b' = .413$			

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TABLE XIII.-- Continued.

 $[M \approx 1.10]$

(b) $M = 1.07$ $\alpha = 13.0^\circ$
 $c_{NA} = 0.90$ $\delta_{AL} = 1.0^\circ$ up

(t) $M = 1.06$ $\alpha = 13.8^\circ$
 $c_{NA} = 0.95$ $\delta_{AL} = 1.1^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	2.072	2.084	2.117	2.112	1.808	1	2.128	2.126	2.146	2.146	1.856
2	1.788	1.951	1.864	1.917	1.706	2	1.878	2.036	1.955	2.007	1.757
3	1.692	1.859	1.792	1.861	1.438	3	1.761	1.934	1.914	1.509	
4	1.580	1.771	1.646	1.762	1.153	4	1.687	1.837	1.741	1.837	1.200
5	1.452	1.536	1.419	1.598	1.088	5	1.544	1.607	1.519	1.674	1.172
6	1.257	1.430	1.402	1.360	0.930	6	1.347	1.510	1.484	1.439	0.998
7	1.160	1.364	1.376	1.304	0.902	7	1.244	1.438	1.432	1.381	0.964
8	1.134	1.151	1.383	1.354	0.752	8	1.205	1.246	1.448	1.420	0.798
9	1.111	1.096	1.262	1.189	0.685	9	1.185	1.178	1.325	1.264	0.751
10	0.971	1.039	1.233	1.179	0.515	10	1.035	1.096	1.291	1.230	0.559
11	0.898	0.984	1.158	1.114	0.498	11	0.926	1.050	1.220	1.173	0.545
12	0.775	0.852	0.981	0.975	0.453	12	0.820	0.907	1.040	1.027	0.472
13	0.625	0.683	0.888	0.816	0.504	13	0.657	0.746	0.885	0.894	0.570
14	0.698	0.685	0.844	0.662	0.546	14	0.740	0.721	0.684	0.629	0.579
15	0.581	0.531	0.672	0.504	0.476	15	0.608	0.574	0.543	0.437	0.516
16	0.602	0.546	0.510	0.455	0.455	16	0.626	0.586	0.594	0.375	
17	0.591	0.588	0.409	0.526	0.409	17	0.637	0.696	0.542	0.411	
18	0.602	0.680	0.401	0.423	0.316	18	0.652	0.667	0.554	0.355	
19	0.319	0.361	0.316	0.288	0.288	19	0.283	0.314	0.439	0.295	
c_n	0.936	1.056	1.109	1.080	0.948	c_n	1.044	1.109	1.162	1.111	1.007
c_m	-1.304	-1.326	-1.529	-1.300	-1.199	c_m	-1.381	-1.400	-1.595	-1.252	-1.325
c_b						c_b'	1.062	x'_{cp} = 37.5	y'_{cp} = 43.0	x'_{cp} = 37.3	y'_{cp} = 42.3
						c_n'	-1.1210				
						c_m'	.456				

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TABLE XIII.- Continued.

$$[M \approx 1.10]$$

(u) $M = 1.06$
 $c_{N_A} = 1.01$ $\alpha = 14.6^\circ$
 $\delta_{a_L} = 1.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.190	2.168	2.204	2.199	1.936	1	2.296	2.236	2.274	2.255	2.006
2	1.965	2.119	2.049	2.085	1.823	2	2.032	2.210	2.117	2.144	1.914
3	1.840	2.002	1.934	1.987	1.576	3	1.923	2.052	2.023	2.080	1.669
4	1.811	1.909	1.820	1.910	1.278	4	1.886	1.965	1.839	1.971	1.362
5	1.625	1.694	1.577	1.756	1.252	5	1.681	1.770	1.673	1.822	1.330
6	1.444	1.578	1.559	1.514	1.073	6	1.552	1.658	1.650	1.610	1.154
7	1.331	1.491	1.486	1.456	1.021	7	1.405	1.564	1.591	1.533	1.096
8	1.268	1.376	1.536	1.501	.858	8	1.369	1.494	1.582	1.584	.909
9	1.253	1.268	1.392	1.320	.804	9	1.329	1.364	1.459	1.295	.844
10	1.117	1.188	1.364	1.297	.597	10	1.242	1.255	1.223	1.128	.613
11	1.001	1.108	1.276	1.225	.597	11	1.088	1.128	1.088	1.030	.595
12	.863	.998	.850	.951	.526	12	.927	.963	.904	.903	.527
13	.692	.790	.782	.756	.627	13	.749	.756	.636	.827	.633
14	.787	.760	.702	.562	.638	14	.840	.701	.770	.595	.630
15	.642	.506	.584	.403	.568	15	.672	.559	.635	.438	.501
16	.681	.526	.635	.383		16	.622	.667	.683	.441	
17	.708	.687	.611	.439		17	.553	.739	.696	.505	
18	.656	.668	.615	.409		18	.471	.668	.707	.517	
19	.239	.352	.512	.411		19	.243	.479	.596	.545	
c_n	1.105	1.165	1.196	1.139	1.071	c_a	1.155	1.217	1.224	1.155	1.125
c_m	-1.163	-1.139	-1.159	-1.1214	-1.146	c_m	-1.134	-1.191	-1.1648	-1.1238	-1.1462
c_n'	1.107			$x'_{ep} = 37.0$		c_n'	1.145			$x'_{ep} = 36.8$	
c_m'	-.1333			$y'_{ep} = 42.8$		c_m'	-.1353			$y'_{ep} = 42.6$	
c_b'	.474					c_b'	.488				

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Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.936	2.086	2.032	2.032	2.274	1	2.296	2.236	2.274	2.255	2.006
2	1.823	1.823	2.210	2.210	2.117	2	1.923	2.052	2.023	2.080	1.669
3	1.576	1.576	1.923	1.923	2.144	3	1.681	1.965	1.886	1.971	1.362
4	1.278	1.278	1.965	1.965	1.362	4	1.886	1.965	1.886	1.971	1.362
5	1.252	1.252	1.770	1.770	1.330	5	1.681	1.770	1.673	1.822	1.330
6	1.559	1.559	1.658	1.658	1.154	6	1.559	1.658	1.650	1.610	1.154
7	1.514	1.514	1.564	1.564	1.096	7	1.405	1.564	1.591	1.533	1.096
8	1.486	1.486	1.494	1.494	1.096	8	1.369	1.494	1.582	1.584	1.096
9	1.536	1.536	1.494	1.494	1.096	9	1.329	1.494	1.459	1.295	1.096
10	1.392	1.392	1.242	1.242	1.128	10	1.292	1.255	1.223	1.128	1.128
11	1.225	1.225	1.088	1.088	1.030	11	1.225	1.128	1.088	1.030	1.030
12	1.225	1.225	1.021	1.021	1.021	12	1.225	1.128	1.088	1.030	1.030
13	1.256	1.256	1.021	1.021	1.021	13	1.256	1.128	1.088	1.030	1.030
14	1.756	1.756	1.770	1.770	1.770	14	1.756	1.770	1.770	1.770	1.770
15	1.562	1.562	1.672	1.672	1.672	15	1.562	1.672	1.672	1.672	1.672
16	1.568	1.568	1.559	1.559	1.559	16	1.568	1.622	1.667	1.683	1.683
17	1.439	1.439	1.553	1.553	1.553	17	1.439	1.553	1.739	1.696	1.505
18	1.409	1.409	1.471	1.471	1.471	18	1.409	1.471	1.668	1.707	1.517
19	1.411	1.411	1.243	1.243	1.243	19	1.411	1.243	1.479	1.596	1.545

$$\begin{aligned} c_{N_A}' &= 1.145 \\ c_m' &= -1.1353 \\ c_b' &= .488 \end{aligned}$$

$$\begin{aligned} x'_{ep} &= 36.8 \\ y'_{ep} &= 42.6 \end{aligned}$$

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TABLE XIII.- Concluded.

$$[M \approx 1.10]$$

$$(w) M = 1.04 \quad \alpha = 17.4^\circ \\ C_{NA} = 1.18 \quad \delta_{aL} = 0.1^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	2.332	2.262	2.314	2.304	2.088
2	2.097	2.263	2.198	2.229	1.976
3	1.966	2.124	2.097	2.127	1.751
4	1.955	2.042	1.951	2.054	1.442
5	1.731	1.835	1.744	1.882	1.372
6	1.613	1.735	1.712	1.681	1.210
7	1.473	1.612	1.625	1.598	1.128
8	1.432	1.560	1.652	1.623	0.906
9	1.394	1.325	1.310	1.283	0.854
10	1.306	1.182	1.221	1.156	0.636
11	1.190	1.095	1.123	1.086	0.626
12	0.879	1.018	0.943	0.949	0.582
13	0.625	0.872	0.870	0.865	0.699
14	0.705	0.784	0.792	0.653	0.665
15	0.645	0.659	0.663	0.489	0.527
16	0.681	0.832	0.799	0.519	
17	0.646	0.786	0.767	0.600	
18	0.598	0.703	0.749	0.648	
19	0.264	0.553	0.631	0.688	
c_n	1.186	1.265	1.257	1.213	1.171
c_m	-1.450	-1.632	-1.724	-1.380	-1.515
c_b					
	$C_N' = 1.189$	$x'_{op} = 37.3$			
	$C_m' = -1.463$	$y'_{op} = 42.7$			
	$C_b' = .508$				

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TABLE XIV
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
[$M \approx 1.15$]

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
(a) $M = 1.14$ $c_{NA} = -0.03$	0.137	0.016	0.119	0.179	0.008	1	0.182	0.064	0.232	0.172	0.050
	•017	•076	•031	•172	•008	2	•082	•117	•065	•178	•046
	•042	•115	•051	•217	•098	3	•080	•151	•017	•231	•093
	•040	•094	•072	•212	•054	4	•000	•114	•021	•244	•056
	•089	•000	•079	•054	•036	5	•042	•025	•049	•095	•029
	•000	•035	•000	•093	•003	6	•013	•004	•004	•067	•003
	•000	•072	•030	•076	•023	7	•025	•050	•051	•067	•010
	•034	•043	•147	•017	•023	8	•021	•030	•149	•017	•019
	•057	•036	•007	•049	•048	9	•020	•019	•010	•042	•045
	•081	•003	•042	•016	•000	10	•068	•016	•022	•022	•010
	•054	•028	•007	•003	•049	11	•010	•006	•029	•013	•036
	•009	•010	•003	•029	•043	12	•012	•032	•022	•022	•036
	•035	•085	•026	•056	•035	13	•057	•081	•013	•032	•028
	•142	•066	•042	•051	•046	14	•153	•068	•045	•060	•039
	•022	•055	•023	•040	•087	15	•041	•054	•019	•020	•089
	•061	•009	•042	•111	•070	16	•070	•009	•016	•096	
	•010	•052	•013	•061	•027	17	•027	•064	•010	•041	
	•034	•052	•051	•076	•056	18	•056	•071	•047	•065	
	•045	•003	•044	•043	•041	19	•041	•010	•046	•046	
c_n	-0.003	0.006	0.009	-0.002	-0.040	c_n	0.018	0.023	0.029	0.013	-0.030
c_m	-0.0065	-0.0029	-0.0014	.0132	.0097	c_m	-0.0093	-0.0047	-0.0030	.0106	.0086
C_N'	-0.001	$x'_{cp} = 176.2$				$C_N' = 0.015$					
C_m'	.0018	$y'_{cp} = 243.5$				$C_m' = .0001$					
C_b'	.003					$C_b' = .003$					
							$x'_{cp} = 24.5$				
							$y'_{cp} = 22.8$				

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TABLE XIV.- Continued.

 $[M \approx 1.15]$

(c) $M = 1.14$
 $C_{NA} = 0.05$

$\alpha = 2.0^\circ$
 $\delta_{aL} = 0.2^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.261	0.196	0.700	0.723	0.412	1	0.436	0.597	0.831	0.898	0.622
2	0.172	0.209	0.147	0.359	0.302	2	0.313	0.484	0.576	0.668	0.555
3	0.146	0.209	0.088	0.247	0.054	3	0.296	0.428	0.391	0.601	0.257
4	0.070	0.147	0.042	0.277	0.078	4	0.206	0.286	0.313	0.514	0.006
5	0.046	0.059	-	0.008	0.139	5	0.135	0.168	0.122	0.428	0.006
6	0.054	0.042	-	0.033	-	6	0.148	0.142	0.134	0.056	0.003
7	0.046	-	0.013	0.071	-	7	0.135	0.072	0.149	0.072	-
8	0.000	0.004	-	0.169	0.055	8	0.075	0.082	0.217	0.143	-
9	0.017	-	0.013	0.039	-	9	0.035	0.064	0.068	0.108	0.030
10	-	0.018	0.048	0.013	0.026	10	0.016	0.088	0.092	0.085	0.025
11	0.030	0.021	-	0.070	0.029	11	0.036	0.114	0.104	0.075	-
12	0.046	-	0.067	0.045	-	12	0.032	0.124	0.169	0.113	-
13	0.066	-	0.029	0.013	-	13	0.028	0.118	0.108	0.073	-
14	0.181	-	0.103	0.062	-	14	0.051	0.14	0.161	0.128	-
15	0.060	-	0.076	0.003	-	15	0.075	0.117	0.109	0.052	-
16	0.101	-	0.028	0.019	-	16	0.083	0.154	0.092	0.088	-
17	0.066	-	0.073	0.038	-	17	0.038	0.17	0.133	0.131	-
18	0.077	-	0.077	0.054	-	18	0.045	0.18	0.130	0.126	-
19	-	0.028	-	0.022	0.050	19	0.049	0.19	0.021	0.052	-
c_n	0.058	0.060	0.074	0.056	0.006	c_m	0.137	0.154	0.170	0.136	0.071
c_m	-0.0144	-	-0.0089	-	.0132	c_b	-0.0259	-	.0189	-.0130	.0154
c_b	.020					c_N'	0.137				.0200
						c_m'	-.0069				
						c_b'	.054				
						x'_{cp}	28.1				
						y'_{cp}	37.9				

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Orifice	(d) $M = 1.15$					Orifice	(e) $M = 2.9^\circ$				
	1	2	3	4	5		1	2	3	4	5
1	0.436	0.597	0.831	0.898	0.622	1	0.576	0.668	0.555		
2	0.313	0.484	0.576	0.668	0.555	2	0.391	0.601	0.257		
3	0.296	0.428	0.576	0.668	0.555	3	0.286	0.313	0.514	0.006	
4	0.206	0.286	0.313	0.514	0.006	4	0.122	0.135	0.428	0.006	
5	0.135	0.168	0.135	0.134	0.003	5	0.122	0.134	0.056	0.003	
6	0.148	0.142	0.148	0.142	0.003	6	0.148	0.142	0.072	0.019	
7	0.135	0.072	0.149	0.072	0.003	7	0.135	0.149	0.072	0.019	
8	0.075	0.082	0.217	0.082	0.003	8	0.075	0.217	0.143	0.003	
9	0.064	0.068	0.108	0.068	0.003	9	0.064	0.108	0.061	0.030	
10	0.088	0.092	0.101	0.092	0.003	10	0.088	0.092	0.101	0.025	
11	0.114	0.104	0.075	0.075	0.003	11	0.114	0.104	0.075	0.031	
12	0.124	0.169	0.021	0.021	0.003	12	0.124	0.169	0.021	0.019	
13	0.118	0.108	0.027	0.027	0.003	13	0.118	0.108	0.027	0.027	
14	0.213	0.161	0.094	0.094	0.003	14	0.213	0.161	0.094	0.043	
15	0.117	0.109	0.003	0.003	0.003	15	0.117	0.109	0.003	0.069	
16	0.154	0.092	0.098	0.098	0.003	16	0.154	0.092	0.098	0.098	
17	0.133	0.131	0.030	0.030	0.003	17	0.133	0.131	0.113	0.030	
18	0.130	0.126	0.091	0.091	0.003	18	0.130	0.126	0.091	0.043	
19	0.021	0.052	0.037	0.037	0.003	19	0.021	0.052	0.037	0.037	

$x'_{cp} = 20.0$
 $y'_{cp} = 39.8$

$C_N' = 0.137$
 $C_m' = -0.0069$
 $C_b' = .054$

TABLE XIV.- Continued.
 $[M \approx 1.15]$

(e) $M = 1.15$ $\alpha = 3.6^\circ$
 $C_{NA} = 0.16$ $\delta_{aL} = 0.2^\circ$ up

(f) $M = 1.16$ $\alpha = 4.0^\circ$
 $C_{NA} = 0.19$ $\delta_{aL} = 0.2^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.606	0.724	0.936	1.010	0.707
2	0.426	0.594	0.664	0.770	0.635
3	0.398	0.606	0.525	0.718	0.360
4	0.297	0.426	0.443	0.589	0.125
5	0.202	0.247	0.231	0.531	0.110
6	0.226	0.199	0.211	0.199	0.080
7	0.190	0.136	0.217	0.159	0.019
8	0.115	0.122	0.267	0.256	0.003
9	0.095	0.107	0.148	0.107	-0.036
10	0.141	0.150	0.133	0.152	0.027
11	0.173	0.143	0.198	0.118	-0.028
12	0.177	0.218	0.152	0.063	-0.019
13	0.155	0.173	0.125	0.031	-0.021
14	0.242	0.188	0.195	0.124	-0.052
15	0.147	0.142	0.092	0.022	-0.056
16	0.190	0.128	0.100	-	0.082
17	0.154	0.164	0.161	-	0.030
18	0.167	0.159	0.147	-	0.028
19	0.042	0.042	0.088	0.054	-0.016

Orifice	Row				
	1	2	3	4	5
1	0.742	0.803	1.002	1.071	0.769
2	0.476	0.665	0.738	0.842	0.706
3	0.471	0.661	0.606	0.781	0.425
4	0.365	0.579	0.504	0.634	0.171
5	0.259	0.293	0.342	0.582	0.161
6	0.264	0.242	0.315	0.277	0.121
7	0.224	0.186	0.263	0.225	0.104
8	0.145	0.149	0.317	0.364	0.024
9	0.120	0.134	0.162	-	0.012
10	0.172	0.192	0.165	0.188	0.021
11	0.219	0.188	0.234	0.142	-0.031
12	0.199	0.250	0.191	0.081	-0.031
13	0.171	0.211	0.181	0.064	-0.012
14	0.271	0.208	0.213	0.129	-0.042
15	0.167	0.153	0.122	0.040	-0.047
16	0.207	0.145	0.129	-	0.055
17	0.175	0.187	0.169	0.021	
18	0.181	0.174	0.179	0.003	
19	0.059	0.117	0.066	-0.012	

c_n	c_m	c_b	0.191	0.211	0.228	0.196	0.119	c_n	0.225	0.253	0.270	0.240	0.160
			-0.024	-0.0255	-0.0211	.0107	.0202	c_m	-0.060	-0.0293	-0.0268	.0059	.0165
$C_N' = 0.191$	$C_m' = -0.024$	$C_b' = .078$						$x_{cp}' = 31.5$	$y_{cp}' = 40.7$				

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TABLE XIV. - Continued.

 $[M \approx 1.15]$

(g) $M = 1.15$
 $c_{NA} = 0.23$
 $\alpha = 4.4^\circ$
 $\delta_{aL} = 0.2^\circ$ up

(h) $M = 1.15$
 $c_{NA} = 0.32$
 $\alpha = 5.4^\circ$
 $\delta_{aL} = 0.4^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.864	0.926	1.067	1.144	0.842	1	1.008	1.077	1.198	1.262	0.957
2	•556	•798	•622	•920	•783	2	•704	•961	•929	•036	•874
3	•541	•727	•720	•847	•506	3	•646	•847	•852	•986	•629
4	•464	•661	•586	•734	•253	4	•582	•806	•710	•872	•370
5	•361	•380	•450	•647	•209	5	•489	•558	•568	•757	•302
6	•315	•313	•411	•363	•165	6	•428	•404	•541	•464	•229
7	•286	•257	•382	•284	•150	7	•363	•359	•511	•433	•213
8	•188	•197	•374	•464	•111	8	•278	•269	•529	•579	•182
9	•170	•197	•223	•257	•039	9	•263	•278	•310	•353	•129
10	•230	•246	•218	•239	•045	10	•316	•348	•337	•388	•118
11	•212	•259	•276	•222	- •009	11	•376	•354	•410	•381	•089
12	•187	•316	•127	•122	- •006	12	•333	•391	•356	•229	•091
13	•208	•254	•232	•097	- •021	13	•258	•305	•309	•197	•044
14	•303	•250	•269	•173	- •030	14	•359	•331	•338	•236	•045
15	•208	•162	•158	•075	- •046	15	•254	•198	•224	•102	•009
16	•227	•177	•156	- •024		16	•265	•202	•188	•018	
17	•200	•198	•184	•042		17	•243	•269	•210	•063	
18	•213	•210	•200	•034		18	•252	•252	•214	•055	
19	•083	•138	•103	- •015		19	•112	•192	•168	•000	
c_n	0.270	0.310	0.330	0.300	0.210	c_m	0.361	0.397	0.426	0.396	0.298
c_m	-0.397	-0.369	-0.364	-0.022	.0110	c_m	-0.0537	-0.0480	-0.0502	-0.0171	-0.0061

$c_{N'} = 0.285$	$x'_{cp} = 33.3$	$x'_{cp} = 34.7$
$c_m' = -0.0236$	$y'_{cp} = 41.8$	$y'_{cp} = 42.2$
$c_b' = .119$		

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TABLE XIV.- Continued.

 $[M \approx 1.15]$

$$(1) M = 1.15 \quad \alpha = 5.8^\circ \quad \delta_{aL} = 0.5^\circ \text{ up}$$

$$(j) M = 1.15 \quad \alpha = 6.3^\circ \quad \delta_{aL} = 0.6^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	1.078	1.146	1.235	1.299	1.011
2	0.765	1.034	1.005	1.094	0.912
3	0.701	0.905	0.895	1.032	0.669
4	0.645	0.861	0.781	0.935	0.432
5	0.564	0.647	0.623	0.807	0.336
6	0.468	0.474	0.604	0.489	0.272
7	0.424	0.412	0.512	0.536	0.255
8	0.338	0.307	0.607	0.612	0.222
9	0.318	0.316	0.369	0.399	0.164
10	0.364	0.412	0.394	0.452	0.150
11	0.420	0.415	0.474	0.452	0.143
12	0.366	0.431	0.395	0.355	0.143
13	0.292	0.318	0.344	0.263	0.112
14	0.390	0.363	0.364	0.258	0.123
15	0.268	0.211	0.238	0.120	0.068
16	0.287	0.216	0.216	0.030	0.077
17	0.263	0.310	0.227	0.077	0.077
18	0.277	0.277	0.231	0.073	0.073
19	0.129	0.129	0.217	0.180	0.012

Orifice	Row				
	1	2	3	4	5
1	1.163	1.224	1.303	1.364	1.056
2	0.840	1.096	1.073	1.164	0.973
3	0.763	0.990	0.965	1.093	0.731
4	0.710	0.911	0.862	1.006	0.467
5	0.629	0.729	0.680	0.863	0.384
6	0.522	0.529	0.672	0.563	0.306
7	0.474	0.470	0.618	0.579	0.300
8	0.400	0.391	0.656	0.659	0.267
9	0.383	0.383	0.489	0.444	0.217
10	0.424	0.424	0.463	0.476	0.192
11	0.466	0.466	0.484	0.540	0.188
12	0.409	0.473	0.428	0.440	0.194
13	0.321	0.339	0.382	0.353	0.132
14	0.408	0.408	0.396	0.397	0.267
15	0.15	0.291	0.235	0.274	0.148
16	0.16	0.305	0.305	0.236	0.123
17	0.17	0.288	0.327	0.257	0.101
18	0.18	0.291	0.310	0.251	0.091
19	0.19	0.150	0.247	0.192	0.021

$c_n = 0.404$	0.442	0.473	0.444	0.344
$c_m = -0.0597$	-0.0539	-0.0569	-0.0269	-0.0182
$c_b = 0.418$	$x'_{op} = 35.4$	$y'_{op} = 42.4$		
$c_m' = -0.633$				
$c_b' = .177$				

$$C_N' = 0.466$$

$$C_m' = -.0506$$

$$C_b' = .198$$

$$x'_{op} = 35.9$$

$$y'_{op} = 42.5$$

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TABLE XIV.- Continued.
 $[M \approx 1.15]$

$$(k) M = 1.15 \quad C_{NA} = 0.46 \quad \alpha = 6.9^\circ \quad Q_{aL} = 0.6^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	1.262	1.299	1.371	1.426	1.127
2	.930	1.175	1.147	1.228	1.028
3	.819	1.065	1.029	1.156	.780
4	.769	.963	.926	1.063	.529
5	.685	.801	.743	.926	.431
6	.583	.603	.736	.635	.355
7	.527	.524	.676	.639	.341
8	.484	.430	.712	.713	.349
9	.431	.416	.551	.490	.291
10	.480	.533	.567	.573	.233
11	.511	.553	.601	.652	.218
12	.457	.505	.471	.492	.199
13	.344	.353	.405	.409	.155
14	.439	.428	.440	.319	.182
15	.317	.246	.303	.190	.156
16	.337	.273	.273	.296	.078
17	.315	.356	.356	.268	.130
18	.316	.345	.345	.274	.103
19	.167	.273	.273	.201	.018

Orifice	Row				
	1	2	3	4	5
1	1.411	1.428	1.472	1.539	1.231
2	1.034	1.295	1.271	1.330	1.140
3	.947	1.780	1.134	1.265	.893
4	.883	1.069	1.043	1.158	.616
5	.801	.902	.831	1.017	.514
6	.680	.789	.846	.744	.453
7	.646	.621	.769	.740	.474
8	.577	.537	.804	.796	.407
9	.543	.569	.713	.639	.356
10	.586	.635	.746	.709	.257
11	.588	.618	.675	.712	.245
12	.511	.558	.522	.562	.226
13	.387	.404	.464	.475	.193
14	.477	.475	.473	.396	.230
15	.366	.279	.365	.279	.190
16	.372	.305	.346	.355	
17	.361	.397	.324	.183	
18	.359	.411	.312	.157	
19	.190	.320	.197	.030	

$C_N' = 0.514$	$x'_{op} = 36.3$	$x'_{op} = 36.8$
$C_m' = -0.0583$	$y'_{op} = 42.6$	$y'_{op} = 42.7$
$C_b' = .219$		

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TABLE XIV.-- Continued.
 $[M \approx 1.15]$

(m) $M = 1.15$
 $C_{NA} = 0.56$
 $\alpha = 8.20^\circ$
 $\delta_{aL} = 0.70^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	1.485	1.483	1.518	1.581	1.290
2	1.099	1.553	1.316	1.389	1.175
3	1.007	1.256	1.202	1.316	0.933
4	0.893	1.121	1.074	1.222	0.661
5	0.860	0.962	0.893	1.063	0.563
6	0.721	0.858	0.886	0.792	0.522
7	0.683	0.693	0.634	0.786	0.509
8	0.633	0.587	0.848	0.857	0.436
9	0.615	0.633	0.765	0.703	0.378
10	0.622	0.657	0.800	0.740	0.268
11	0.617	0.660	0.715	0.749	0.263
12	0.539	0.587	0.553	0.599	0.250
13	0.399	0.427	0.492	0.500	0.216
14	0.497	0.486	0.499	0.415	0.250
15	0.383	0.310	0.388	0.306	0.195
16	0.394	0.321	0.283	0.200	0.120
17	0.381	0.425	0.356	0.212	0.117
18	0.367	0.431	0.338	0.178	0.102
19	0.195	0.337	0.184	0.033	0.191

Orifice	Row				
	1	2	3	4	5
1	1.575	1.558	1.604	1.659	1.347
2	1.213	1.426	1.379	1.451	1.243
3	1.091	1.337	1.279	1.377	0.990
4	0.993	1.194	1.167	1.284	0.729
5	0.921	1.034	0.964	1.127	0.621
6	0.792	0.935	0.953	0.864	0.572
7	0.739	0.781	0.906	0.860	0.564
8	0.688	0.667	0.908	0.907	0.466
9	0.685	0.703	0.827	0.777	0.415
10	0.669	0.709	0.858	0.808	0.290
11	0.658	0.658	0.699	0.785	0.290
12	0.572	0.618	0.590	0.668	0.260
13	0.432	0.455	0.541	0.532	0.242
14	0.519	0.511	0.539	0.443	0.243
15	0.410	0.341	0.416	0.322	0.242
16	0.410	0.340	0.420	0.233	
17	0.404	0.453	0.393	0.289	
18	0.402	0.459	0.374	0.230	
19	0.204	0.361	0.179	0.058	

c_n	c_m	c_n	c_m	CONFIDENTIAL	
				0.661	0.714
0.611	0.664	0.711	0.677	0.556	-0.0546
-0.0867	-0.0835	-0.0951	-0.0674	-0.0919	-0.0895

$C_N' = 0.634$
 $C_m' = -0.0752$
 $C_b' = .271$

$x'_{cp} = 36.9$
 $y'_{cp} = 42.8$

$x'_{cp} = 37.0$
 $y'_{cp} = 42.8$

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TABLE XIV. - Continued.
 $[M \approx 1.15]$

(o) $M = 1.15$ $\alpha = 9.4^\circ$
 $C_{NA} = 0.66$ $\delta_{AL} = 0.9^\circ$ up

(p) $M = 1.14$ $\alpha = 10.2^\circ$
 $C_{NA} = 0.72$ $\delta_{AL} = 1.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.645	1.636	1.678	1.717	1.405	1	1.719	1.721	1.759	1.786	1.478
2	1.329	1.508	1.452	1.506	1.285	2	1.413	1.601	1.540	1.600	1.381
3	1.169	1.410	1.345	1.451	1.056	3	1.273	1.515	1.423	1.536	1.138
4	1.074	1.280	1.241	1.352	.790	4	1.151	1.405	1.318	1.434	.862
5	0.994	1.112	1.018	1.184	.693	5	1.090	1.201	1.094	1.279	.791
6	0.862	1.002	1.014	1.938	.619	6	0.955	1.097	1.097	1.027	.679
7	0.800	.909	.985	.922	.640	7	0.897	1.041	1.041	1.074	.709
8	0.769	.735	.984	.986	.510	8	0.866	.830	1.068	1.065	.548
9	0.769	.769	.902	.839	.453	9	0.855	.843	.974	.922	.506
10	0.721	.772	.910	.873	.311	10	0.798	.843	.990	.938	.343
11	0.698	.757	.866	.836	.317	11	0.765	.819	.937	.906	.357
12	0.618	.660	.649	.703	.275	12	0.672	.723	.724	.767	.314
13	0.465	.488	.582	.582	.266	13	0.495	.542	.647	.642	.312
14	0.548	.550	.585	.472	.299	14	0.586	.577	.635	.513	.337
15	0.448	.376	.376	.349	.254	15	0.477	.423	.515	.398	.309
16	0.433	.360	.458	.266		16	0.460	.392	.514	.313	
17	0.425	.489	.437	.330		17	0.465	.527	.493	.386	
18	0.434	.495	.409	.296		18	0.462	.531	.453	.351	
19	0.219	.379	.169	.109		19	0.248	.403	.179	.194	
c_n	0.715	0.770	0.819	0.786	0.654	c_n	0.779	0.839	0.887	0.855	0.718
c_m	-0.0987	-0.0972	-0.1139	-0.0867	-0.0693	c_m	-0.1074	-0.1062	-0.1272	-0.0989	-0.0800
c_b	$C_N' = 0.737$ $C_m' = -0.0898$ $C_b' = .315$		$x'_{cp} = 37.2$ $y'_{cp} = 42.8$				$C_N' = 0.802$ $C_m' = -.0997$ $C_b' = .243$		$x'_{cp} = 37.4$ $y'_{cp} = 42.8$		

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TABLE XIV.- Continued.

 $[M \approx 1.15]$

$$(q) M = 1.14 \quad C_{NA} = 0.80 \quad \alpha = 11.2^\circ \quad \delta_{BL} = 1.2^\circ \text{ up}$$

$$(r) M = 1.14 \quad C_{NA} = 0.86 \quad \alpha = 12.2^\circ \quad \delta_{BL} = 1.2^\circ \text{ up}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.778	1.803	1.841	1.876	1.975	1	1.830	1.882	1.909	1.936	1.622
2	1.492	1.702	1.620	1.671	1.461	2	1.557	1.781	1.690	1.743	1.521
3	1.413	1.600	1.528	1.633	1.215	3	1.523	1.687	1.608	1.697	1.294
4	1.277	1.498	1.415	1.517	0.946	4	1.380	1.582	1.498	1.594	1.016
5	1.205	1.298	1.196	1.385	0.889	5	1.295	1.377	1.477	1.440	0.967
6	1.019	1.183	1.188	1.130	0.768	6	1.133	1.283	1.258	1.221	0.839
7	0.976	1.149	1.171	1.103	0.765	7	1.081	1.224	1.243	1.163	0.811
8	0.957	0.923	1.148	1.151	0.617	8	1.043	1.015	1.226	1.227	0.671
9	0.944	0.923	1.063	1.003	0.546	9	1.022	0.993	1.130	1.071	0.600
10	0.874	0.908	1.045	1.020	0.389	10	0.953	0.972	1.116	1.072	0.443
11	0.816	0.877	1.008	0.962	0.391	11	0.888	0.936	1.065	1.018	0.443
12	0.723	0.775	0.829	0.840	0.348	12	0.764	0.845	0.899	0.884	0.381
13	0.544	0.595	0.726	0.686	0.386	13	0.588	0.665	0.804	0.758	0.436
14	0.623	0.621	0.703	0.561	0.398	14	0.659	0.660	0.767	0.597	0.437
15	0.510	0.463	0.573	0.430	0.367	15	0.540	0.519	0.642	0.476	0.414
16	0.493	0.433	0.598	0.365	0.367	16	0.532	0.471	0.661	0.422	
17	0.503	0.564	0.548	0.437	0.348	17	0.544	0.603	0.477	0.497	
18	0.512	0.574	0.404	0.412	0.235	18	0.553	0.604	0.404	0.461	
19	0.287	0.400	0.241	0.235	0.19	19	0.348	0.416	0.300	0.263	
c_n	0.844	0.905	0.959	0.927	0.787	c_d	0.911	0.970	1.022	0.985	0.845
c_m	-0.1170	-0.1157	-0.1394	-0.1111	-0.0918	c_m	-0.1266	-0.1260	-0.1505	-0.1221	-0.1034

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TABLE XIV: - Continued.

$$(s) \quad C_{\text{NA}} = 0.92 \quad M = 1.14 \quad Q_{\text{aL}} = 1.20 \quad \alpha = 13.2^\circ \quad \text{up}$$

$$\delta_{\text{aI}}^{\text{c}} = \frac{13.9^{\circ}}{1.2^{\circ}} \text{ up}$$

$$(t) \quad C_{NM} = 1.13 \\ C_{NA} = 0.96$$

Orifice	Row					S
	1	2	3	4		
1	1.900	1.949	1.932	1.987	1.698	
2	1.643	1.850	1.780	1.817	1.592	
3	1.614	1.764	1.694	1.753	1.357	
4	1.470	1.663	1.577	1.659	1.086	
5	1.388	1.448	1.365	1.537	1.036	
6	1.249	1.354	1.334	1.291	.899	
7	1.173	1.298	1.305	1.252	.873	
8	1.119	1.121	1.310	1.278	.717	
9	1.084	1.074	1.201	1.138	.666	
10	1.019	1.013	1.182	1.129	.494	
11	.936	1.009	1.129	1.076	.479	
12	.803	.904	.952	.946	.420	
13	.623	.708	.878	.823	.503	
14	.693	.688	.835	.639	.500	
15	.581	.561	.703	.519	.465	
16	.576	.515	.653	.455		
17	.587	.642	.476	.547		
18	.588	.626	.457	.503		
19	.371	.430	.382	.325		
C _H	0.971	1.028	1.084	1.042	0.906	
C _M	-1.348	-1.347	-1.612	-1.327	-1.162	
C _B						
C _N ¹	0.985					x' _{cp} = 38.1
C _M ¹	-1.1290					y' _{cp} = 42.9
C _B ¹	.422					

Orifice	Row					$x_1^1, \text{cp} = 38.2$ $y_1^1, \text{cp} = 42.8$
	1	2	3	4	5	
1	1.968	2.010	2.039	2.026	1.749	
2	1.739	1.905	1.829	1.880	1.661	
3	1.668	1.830	1.763	1.825	1.426	
4	1.567	1.733	1.631	1.726	1.153	
5	1.472	1.533	1.437	1.589	1.107	
6	1.332	1.432	1.406	1.371	.967	
7	1.229	1.383	1.394	1.308	.919	
8	1.186	1.230	1.359	1.356	.773	
9	1.139	1.151	1.266	1.197	.714	
10	1.073	1.072	1.235	1.173	.544	
11	.977	1.051	1.176	1.123	.542	
12	.847	.960	1.007	.994	.467	
13	.653	.772	.938	.863	.550	
14	.738	.749	.847	.693	.559	
15	.602	.585	.679	.549	.504	
16	.630	.570	.622	.496		
17	.627	.677	.562	.526		
18	.639	.677	.539	.471		
19	.349	.396	.462	.314		
c_n	1.027	1.089	1.132	1.089	0.962	
c_m	-.1435	-.1460	-.1684	-.1385	-.1285	

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TABLE XIV.- Continued.
 $[M \approx 1.15]$

(u) $M = 1.13$ $\alpha = 14.7^\circ$
 $C_{NA} = 1.00$ $\delta_{BL} = 1.1^\circ$ up

(v) $M = 1.12$
 $C_{NA} = 1.06$

$\alpha = 17.0^\circ$
 $\delta_{BL} = 1.0^\circ$ up

Row

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.027	2.037	2.066	1.787	1	2.166	2.082	2.133	2.120	1.886	
2	1.847	1.976	1.885	1.931	2	1.970	2.081	1.996	2.280	1.793	
3	1.746	1.885	1.810	1.875	3	1.845	1.953	1.890	1.960	1.564	
4	1.656	1.792	1.697	1.778	4	1.771	1.876	1.780	1.854	1.277	
5	1.536	1.594	1.493	1.627	5	1.586	1.684	1.588	1.719	1.234	
6	1.401	1.490	1.458	1.428	6	1.489	1.572	1.557	1.516	1.096	
7	1.297	1.420	1.419	1.365	7	1.332	1.492	1.504	1.452	1.018	
8	1.234	1.320	1.411	1.406	8	1.283	1.409	1.494	1.483	0.880	
9	1.178	1.210	1.311	1.232	9	1.245	1.291	1.381	1.304	0.811	
10	1.100	1.119	1.285	1.226	10	1.160	1.196	1.350	1.283	0.646	
11	1.000	1.077	1.217	1.159	11	1.046	1.147	1.166	1.110	0.626	
12	0.853	0.997	1.017	1.025	12	0.888	1.058	0.864	0.892	0.563	
13	0.685	0.806	0.882	0.909	13	0.705	0.791	0.798	0.794	0.656	
14	0.762	0.767	0.724	0.668	14	0.793	0.684	0.736	0.596	0.652	
15	0.625	0.617	0.608	0.486	15	0.657	0.537	0.537	0.608	0.446	
16	0.650	0.584	0.631	0.428	16	0.680	0.571	0.658	0.426	0.592	
17	0.655	0.638	0.607	0.459	17	0.705	0.692	0.643	0.478		
18	0.677	0.643	0.589	0.418	18	0.589	0.661	0.630	0.487		
19	0.288	0.391	0.517	0.340	19	0.201	0.440	0.568	0.458		
c_n	1.065	1.127	1.156	1.110	1.008	c_n	1.110	1.172	1.186	1.139	1.076
c_m	-1.470	-1.487	-1.667	-1.343	-1.387	c_m	-1.470	-1.484	-1.631	-1.255	-1.507
C_N'	1.069		$x'_{cp} = 37.9$			C_N'	1.109				
C_m'	-1.384		$y'_{cp} = 42.7$			C_m'	-1.368				
C_b'	.457					C_b'	.474				
									$x'_{cp} = 37.3$		
									$y'_{cp} = 42.7$		

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TABLE XIV.- Concluded.

$$\left[M \approx 1.15 \right]$$

$$(v) \quad M = 1.11 \\ C_{H_A} = 1.13$$

$$\alpha = 17.8^\circ \\ \delta_{aL} = 0.3^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	2.229	2.147	2.204	2.179	1.993
2	2.005	2.139	2.095	2.346	1.856
3	1.890	2.012	1.969	2.027	1.632
4	1.854	1.938	1.869	1.954	1.339
5	1.629	1.758	1.664	1.793	1.299
6	1.514	1.632	1.632	1.562	1.142
7	1.371	1.534	1.550	1.522	1.088
8	1.322	1.453	1.548	1.530	.907
9	1.296	1.373	1.421	1.255	.867
10	1.228	1.245	1.205	1.106	.659
11	1.173	1.085	1.093	1.024	.654
12	1.063	.975	.903	.904	.584
13	.766	.813	.848	.816	.711
14	.815	.742	.757	.651	.675
15	.588	.619	.632	.468	.556
16	.524	.692	.671	.484	
17	.548	.749	.677	.549	
18	.486	.712	.680	.572	
19	.247	.594	.593	.563	
c_n	1.134	1.217	1.206	1.154	1.130
c_m	-.1405	-.1574	-.1626	-.1282	-.1567
c_b'					
				$x'_{cp} = 37.3$	
				$y'_{cp} = 42.7$	
				$c_b' = .487$	

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TABLE XV
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-5 WING

$[M \approx 0.71; \delta_F = 7^\circ \pm 1.5^\circ]$

(a) $M = 0.70$ $\alpha = 1.4^\circ$
 $c_{NA} = -0.11$ $\delta_{AL} = 0.1^\circ$ up
 $\delta_F = 8.1^\circ$

(b) $M = 0.70$ $\alpha = 1.9^\circ$
 $c_{NA} = -0.05$ $\delta_{AL} = 0.1^\circ$ up
 $\delta_F = 8.1^\circ$

Orifice	Row					Row	
	1	2	3	4	5		
1	-0.492	-0.843	-0.626	-0.788	-0.568	1	-0.325
2	-	0.321	-	0.337	-	2	-
3	-	0.217	-	0.054	-	3	-
4	-	0.057	-	0.178	-	4	-
5	0.094	0.285	0.293	0.093	0.177	5	0.254
6	0.081	0.193	0.240	0.284	0.111	6	0.161
7	0.027	0.041	0.137	0.203	0.021	7	0.174
8	0.040	0.152	0.241	0.291	-	8	0.133
9	0.086	0.042	0.105	0.094	-	9	0.160
10	0.030	0.156	0.156	0.072	0.062	10	0.059
11	0.021	-	0.010	0.042	-	11	0.106
12	0.020	-	0.084	0.073	-	12	0.030
13	0.028	-	0.010	0.000	-	13	0.055
14	0.124	0.073	0.096	0.021	0.010	14	0.072
15	0.010	-	0.000	-	0.031	15	0.010
16	0.031	-	0.024	0.051	0.010	16	0.020
17	0.021	-	0.052	-	0.010	17	0.011
18	-	0.050	0.042	0.051	0.000	18	-
19	0.010	0.021	0.021	0.043	0.032	19	0.000
c_n	0.008	0.055	0.053	0.029	0.002	c_n	0.066
c_m	-0.0125	-	-0.0184	-0.0205	-0.0144	c_m	-0.0195

Orifice	Row					Row	
	1	2	3	4	5		
1	-	-	-	-	-	1	-0.244
2	-	-	-	-	-	2	-
3	-	-	-	-	-	3	-
4	-	-	-	-	-	4	-
5	-	-	-	-	-	5	-
6	-	-	-	-	-	6	-
7	-	-	-	-	-	7	-
8	-	-	-	-	-	8	-
9	-	-	-	-	-	9	-
10	-	-	-	-	-	10	-
11	-	-	-	-	-	11	-
12	-	-	-	-	-	12	-
13	-	-	-	-	-	13	-
14	-	-	-	-	-	14	-
15	-	-	-	-	-	15	-
16	-	-	-	-	-	16	-
17	-	-	-	-	-	17	-
18	-	-	-	-	-	18	-
19	-	-	-	-	-	19	-
c_n	0.008	0.055	0.053	0.029	0.002	c_n	0.066
c_m	-0.0125	-	-0.0184	-0.0205	-0.0144	c_m	-0.0195

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TABLE XV.-- Continued.

(c) $M = 0.70$
 $c_{NA} = 0.02$

$\alpha = 2.6^\circ$
 $\delta_{fL} = 0.1^\circ$ up
 $\delta_f = 7.6^\circ$

(d) $M = 0.70$
 $c_{NA} = 0.11$

$\alpha = 3.7^\circ$
 $\delta_{fL} = 0.1^\circ$
 $\delta_f = 7.4^\circ$

$$[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	-0.041	0.013	0.135	0.040	-0.107	1	0.204	0.296	0.365	0.297	0.107
2	•0.097	•0.121	-	•0.070	•0.069	2	•249	•337	•167	•313	•240
3	•0.054	•0.188	•0.108	•0.135	•0.162	3	•269	•390	•285	•337	•216
4	•0.226	•0.326	•0.175	•0.192	•0.512	4	•409	•461	•310	•412	•532
5	•0.361	•0.445	•0.476	•0.277	•0.217	5	•521	•580	•555	•383	•268
6	•0.268	•0.329	•0.383	•0.444	•0.191	6	•362	•397	•529	•538	•201
7	•0.200	•0.189	•0.366	•0.350	•0.052	7	•294	•297	•380	•430	•094
8	•0.214	•0.288	•0.345	•0.357	-	8	•267	•274	•439	•426	•031
9	•0.171	•0.155	•0.177	•0.155	-	9	•246	•176	•281	•196	- .020
10	•0.119	•0.207	•0.153	•0.144	-	10	•159	•238	•163	•154	- .052
11	•0.074	•0.058	•0.113	•0.074	•0.000	11	•117	•116	•175	•126	•010
12	•0.100	•0.135	•0.062	•0.051	-	12	•130	•155	•082	•061	- .042
13	•0.064	•0.031	•0.051	-	•0.010	13	•083	•052	•051	•021	•030
14	•0.123	•0.094	•0.067	•0.051	•0.000	14	•123	•104	•086	•020	- .010
15	•0.010	•0.000	•0.010	-	•0.042	-	•0.011	•0.000	•0.031	- .010	- .021
16	•0.041	•0.020	•0.061	-	•0.021	16	•051	•030	•072	- .052	
17	•0.021	•0.041	•0.031	•0.051	-	17	•043	•041	•021	•071	
18	•0.000	•0.041	•0.041	-	•0.021	18	-	•0.020	•0.052	•041	- .084
19	•0.010	•0.031	•0.075	•0.063	-	19	•0.040	•0.041	•0.053	•0.063	
c_n	0.127	0.159	0.149	0.134	0.068	c_n	0.186	0.211	0.209	0.184	0.117
c_m	-.0125	-.0136	-.0151	-.0050	.0025	c_m	-.0104	-.0125	-.0142	.0033	.0011
c_b'	0.133	$x'_{op} = 31.3$	$y'_{op} = 39.5$			$c_{n'} = 0.184$				$x'_{op} = 28.1$	
						$c_{m'} = .0056$				$y'_{op} = 40.2$	
						$c_{b'} = .074$					

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TABLE XV.- Continued.

 $[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$

(e) $M = 0.70$
 $c_{NA} = 0.17$

$\alpha = 4.4^\circ$
 $\delta_{BL} = 0.1^\circ$ up
 $\delta_f = 7.2^\circ$

(f) $M = 0.70$
 $c_{NA} = 0.20$

$\alpha = 4.8^\circ$
 $\delta_{BL} = 0.1^\circ$ up
 $\delta_f = 7.1^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.555	0.732	0.957	0.901	0.294	1	0.636	1.079	1.321	1.170	0.428
2	.538	.537	.403	.503	.333	2	.676	.510	.556	.829	.412
3	.483	.524	.419	.471	.337	3	.591	.604	.487	.524	.404
4	.619	.556	.511	.507	.561	4	.774	.595	.471	.603	.581
5	.653	.659	.620	.566	.309	5	.706	.740	.725	.579	.319
6	.468	.533	.659	.644	.260	6	.468	.533	.633	.671	.230
7	.373	.363	.406	.537	.114	7	.426	.403	.500	.537	.146
8	.333	.424	.257	.507	.041	8	.347	.383	.530	.548	.061
9	.310	.258	.321	.247	-.010	9	.331	.320	.332	.309	.010
10	.168	.258	.223	.195	-.082	10	.198	.268	.234	.205	-.031
11	.170	.087	.185	.157	.031	11	.180	.135	.216	.168	.031
12	.109	.165	.092	.122	-.010	12	.109	.109	.176	.092	.122
13	.092	.052	.092	-.021	.000	13	.092	.083	.092	.010	.030
14	.133	.104	.086	.020	.021	14	.123	.093	.095	.020	-.051
15	.050	.010	.000	-.053	-.032	15	.050	.041	.000	-.063	.042
16	.051	.060	.051	.010	-.010	16	.041	.030	.020	-.021	
17	.021	.031	.010	-.030	-.021	17	.021	.061	.020	.000	
18	-.030	.052	.041	-.021	.021	18	-	.020	.062	.030	-.073
19	.040	.031	.042	.021	-.019	19	.020	.031	.053	.073	
c_n	0.248	0.273	0.283	0.257	0.157	c_n	0.274	0.295	0.300	0.293	0.189
c_m	-.0049	-.0086	-.0082	.0050	.0045	c_m	-.0022	-.0072	-.0042	.0109	.0018
c_b	$c_N^b = 0.247$ $c_m^b = -.0015$ $c_b^b = .101$		$x'_{cp} = 25.6$ $y'_{cp} = 40.8$			$c_N^b = 0.272$ $c_m^b = .0008$ $c_b^b = .113$		$x'_{cp} = 24.7$ $y'_{cp} = 41.5$			

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TABLE XV.- Continued.

$$[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$$

$$(g) M = 0.70 \quad \alpha = 5.9^\circ \quad \delta_{AL} = 0^\circ \quad \delta_f = 7.0^\circ$$

$$(h) M = 0.70 \quad \alpha = 6.9^\circ \quad \delta_{AL} = 0.2^\circ \text{ down}$$

$$\delta_f = 6.8^\circ$$

Orifice	Row				
	1	2	3	4	5
1	0.973	1.604	1.750	1.505	1.069
2	1.006	1.341	1.305	1.358	0.917
3	0.859	0.818	0.918	1.222	0.471
4	0.970	0.703	0.645	0.944	0.600
5	0.772	0.806	0.738	0.763	0.370
6	0.602	0.641	0.698	0.697	0.290
7	0.493	0.470	0.540	0.536	0.187
8	0.386	0.479	0.609	0.589	0.051
9	0.373	0.350	0.362	0.267	0.051
10	0.247	0.371	0.274	0.277	-0.021
11	0.180	0.174	0.247	0.167	0.062
12	0.179	0.207	0.133	0.162	-0.010
13	0.110	0.073	0.082	0.002	0.000
14	0.163	0.114	0.124	0.071	0.051
15	0.040	0.041	-0.021	-0.021	0.000
16	0.071	0.050	0.081	0.021	-0.021
17	0.032	0.041	-0.010	-0.010	0.010
18	-0.020	0.052	0.061	-0.010	0.010
19	-0.020	0.031	0.053	0.073	0.020

Orifice	Row				
	1	2	3	4	5
1	1.226	1.904	2.147	1.713	1.212
2	1.387	1.791	1.632	1.596	1.205
3	1.056	1.256	1.346	1.485	0.751
4	1.219	0.889	0.776	1.350	0.568
5	0.862	0.830	0.814	0.996	0.389
6	0.653	0.693	0.761	0.774	0.319
7	0.557	0.495	0.495	0.659	0.238
8	0.491	0.518	0.518	0.633	0.081
9	0.404	0.349	0.413	0.358	0.071
10	0.266	0.266	0.349	0.303	0.255
11	0.200	0.164	0.164	0.188	0.093
12	0.12	0.158	0.237	0.133	0.151
13	0.137	0.124	0.124	0.102	0.041
14	0.193	0.113	0.104	0.071	0.051
15	0.010	0.041	0.000	-0.042	0.010
16	0.061	0.080	0.080	0.081	0.010
17	0.032	0.032	0.081	0.010	0.061
18	-0.030	0.062	0.061	-0.041	0.010
19	0.020	0.063	0.063	0.063	0.052

Orifice	Row				
	1	2	3	4	5
c _H	0.344	0.369	0.382	0.376	0.274
c _M	-0.019	-0.0013	-0.0027	0.047	0.073
c _N	0.410	0.405	0.442	0.434	0.437
c _M	.0048	.0032	.0019	.0266	.0071
c _B	0.355	x'cp = 23.6	y'cp = 41.8		
	-0.050				
	.148				
				x'cp = 22.7	
				y'cp = 42.2	
c _{N'}	0.410				
c _{M'}	.0095				
c _{B'}	.173				

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TABLE XV.- Continued.

 $[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$

(1) $M = 0.71$
 $c_{N_A} = 0.34$
 $\alpha = 7.4^\circ$
 $\delta_{\text{eff}} = 0.2^\circ$ down
 $\delta_f = 6.7^\circ$

Orifice	Row					Row
	1	2	3	4	5	
1	1.375	2.027	2.274	1.791	1.359	1
2	1.525	2.000	1.837	1.636	1.286	2
3	1.179	1.523	1.427	1.645	.891	3
4	1.320	1.055	1.035	1.473	.583	4
5	.973	.889	.846	1.221	.396	5
6	.766	-.687	.885	.807	.326	6
7	.578	.531	.614	.675	.236	7
8	.539	.540	.680	.581	.150	8
9	.411	.387	.460	.345	.060	9
10	.234	.346	.301	.294	.051	10
11	.230	.200	.294	.207	.062	11
12	.177	.235	.111	.150	.041	12
13	.118	.061	.141	.082	.060	13
14	.161	.123	.123	.075	.030	14
15	.020	.081	.020	.000	.010	15
16	.070	.059	.030	-	.020	16
17	.042	.070	.030	.020	-	17
18	-	.020	.092	.020	-	18
19	.020	-	.020	.073	.062	19
c_n	0.435	0.473	0.474	0.459	0.378	
c_m	.0085	.0056	.0108	.0251	.0092	
c_b						

(J) $M = 0.71$
 $c_{N_A} = 0.40$
 $\alpha = 8.3^\circ$
 $\delta_{\text{eff}} = 0.5^\circ$ down
 $\delta_f = 6.5^\circ$

Orifice	Row					Row
	1	2	3	4	5	
1	1.740	2.130	2.461	1.967	1.497	
2	1.801	2.148	1.841	1.462		
3	1.397	1.398	1.712	1.125		
4	1.520	1.514	1.412	1.614	.648	
5	1.086	.990	1.074	1.318	.465	
6	.880	.884	.906	1.027	.344	
7	.667	.634	.770	.790	.276	
8	.628	.618	.728	.753	.120	
9	.503	.425	.468	.394	.100	
10	.291	.395	.399	.353	.071	
11	.250	.247	.253	.257	.102	
12	.166	.264	.091	.229	.010	
13	.135	.133	.101	.051	.069	
14	.160	.112	.103	.100	.030	
15	.040	.080	.030	-.041	.031	
16	.080	.049	.090	.030		
17	.042	.042	.090	.010		
18	-.019	.061	.040	-.041		
19	.040	.050	.094	.072		
c_n	0.505	0.552	0.553	0.545	0.443	
c_m	.0121	.0106	.0102	.0203	.0088	
c_b						

(J) $M = 0.71$
 $c_{N_A} = 0.40$
 $\alpha = 8.3^\circ$
 $\delta_{\text{eff}} = 0.5^\circ$ down
 $\delta_f = 6.5^\circ$

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TABLE XV.- Continued.

$$\left[M \approx 0.71; \delta_f = 70 \pm 1.5^\circ \right]$$

$$(k) \quad M = 0.71 \\ C_{NA} = 0.45 \\ \alpha = 8.7^\circ \\ \delta_{BL} = 0.4^\circ \text{ down} \\ \delta_f = 6.5^\circ$$

$$(l) \quad M = 0.71 \\ C_{NA} = 0.51 \\ \alpha = 9.7^\circ \\ \delta_{BL} = 0.3^\circ \text{ down} \\ \delta_f = 6.5^\circ$$

Orifice	Row				
	1	2	3	4	5
1	1.966	2.168	2.0355	2.033	1.562
2	1.855	2.135	2.046	1.947	1.541
3	1.489	1.990	1.805	1.781	1.138
4	1.589	1.687	1.557	1.735	.698
5	1.138	1.122	1.074	1.434	.475
6	.880	.831	1.009	1.053	.364
7	.719	.647	.770	.843	.286
8	.615	.591	.793	.766	.170
9	.482	.425	.529	.434	.110
10	.330	.385	.379	.292	.081
11	.250	.256	.333	.267	.113
12	.195	.203	.091	.159	.082
13	.126	.092	.181	.091	.049
14	.160	.132	.121	.070	.040
15	.050	.080	.051	-.031	-.010
16	.080	.049	.070	-.020	
17	.042	.070	-.010	.040	
18	-.019	.071	-.070	-.051	
19	.040	.030	.063	.082	

Orifice	Row				
	1	2	3	4	5
1	2.546	2.183	2.059	2.157	1.699
2	2.00	2.141	2.011	1.588	
3	1.744	1.923	1.016	1.313	
4	1.801	1.887	1.631	1.832	.860
5	1.362	1.464	1.360	1.622	.609
6	1.022	1.226	1.297	1.191	.487
7	.827	.899	1.020	.986	.338
8	.725	.732	.987	.890	.175
9	.581	.541	.673	.540	.098
10	.340	.492	.495	.431	.049
11	.11	.273	.249	.290	
12	.12	.218	.257	.176	.079
13	.13	.167	.079	.117	.109
14	.14	.156	.109	.100	.049
15	.15	.048	.086	.059	.020
16	.16	.087	.067	.097	.000
17	.17	.041	.078	.010	.068
18	-.18	-.009	.049	.058	-.020
19	.19	.019	.029	.091	.110

c_n	0.526	0.556	0.579	0.550	0.462
c_m	.0132	.0150	.0101	.0284	.0082
c_b					

C_N'	0.526	$x'_{cp} = 21.4$
C_m'	.0189	$y'_{cp} = 42.4$
C_b'	.223	

$$x'_{cp} = 22.1 \\ y'_{cp} = 42.1$$

$$C_N' = 0.607 \\ C_m' = .0177 \\ C_b' = .256$$

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TABLE XV.- Continued.

$$\left[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

(m) $M = 0.72$
 $c_{NA} = 0.54$

$\alpha = 10.2^\circ$
 $\delta_{aL} = 0^\circ$
 $\delta_f = 6.5^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.662	1.968	1.925	1.921	1.670	1	2.670	1.705	1.878	1.673	1.589
2	2.258	2.007	1.630	1.812	1.543	2	2.194	1.683	1.572	1.589	1.555
3	1.773	1.791	1.675	1.755	1.313	3	1.670	1.607	1.631	1.521	1.299
4	1.678	1.869	1.565	1.711	.824	4	1.777	1.645	1.497	1.486	.908
5	1.399	1.526	1.384	1.507	.652	5	1.383	1.446	1.344	1.391	.780
6	1.076	1.266	1.260	1.230	.511	6	1.151	1.353	1.221	1.154	.571
7	.870	.954	1.138	1.015	.374	7	1.022	1.082	1.100	1.016	.467
8	.756	.842	1.028	.998	.183	8	.947	.998	1.029	.999	.247
9	.616	.644	.755	.633	.145	9	.739	.810	.795	.712	.201
10	.402	.546	.576	.495	.029	10	.463	.675	.636	.576	.077
11	.291	.302	.467	.416	.148	11	.347	.407	.539	.510	.185
12	.273	.293	.185	.230	.069	12	.270	.348	.259	.398	.097
13	.139	.088	.136	.088	.076	13	.180	.126	.192	.194	.132
14	.193	.098	.108	.067	.107	14	.172	.136	.214	.124	.106
15	.029	.087	.088	-	.020	15	.066	.105	.125	.069	.069
16	.086	.057	.087	.029	.010	16	.076	.112	.143	.096	
17	.030	.087	.039	.058		17	.050	.115	.086	.143	
18	.000	.049	.086	.030		18	.009	.087	.076	.078	
19	.019	.010	.090	.079		19	.009	.019	.089	.078	
c_n	0.649	0.670	0.665	0.639	0.543	c_n	0.684	0.701	0.687	0.654	0.595
c_m	.0170	.0076	-.0101	.0098	.0022	c_m	.0108	-.0139	-.0254	-.0173	-.0135

$c_{N'} = 0.623$
 $c_m' = .0108$
 $c_b' = .261$

$x'_{cp} = 23.3$
 $y'_{cp} = 41.9$

$c_{N'} = 0.651$
 $c_m' = -.0077$
 $c_b' = .273$

$x'_{cp} = 26.2$
 $y'_{cp} = 41.9$

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TABLE XV.- Continued.

$$[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$$

$$(o) M = 0.72 \quad \alpha = 11.4^\circ \\ C_{NA} = 0.62 \quad \delta_{AL} = 0^\circ \\ \delta_f = 6.6^\circ$$

$$(p) M = 0.72 \quad \alpha = 13.0^\circ \\ C_{NA} = 0.64 \quad \delta_{AL} = 0.1^\circ \text{ up} \\ \delta_f = 6.5^\circ$$

Orifice	Row					Row					
	1	2	3	4	5						
1	2.796	1.781	1.706	1.531	1	2.491	1.460	1.583	1.415	1.345	
2	2.119	1.762	1.500	1.593	2	1.905	1.413	1.397	1.213	1.300	
3	1.574	1.637	1.524	1.602	3	1.615	1.312	1.333	1.250	1.127	
4	1.821	1.650	1.489	1.581	4	1.706	1.386	1.301	1.235	1.903	
5	1.426	1.439	1.313	1.384	5	1.289	1.200	1.127	1.212	1.793	
6	1.270	1.372	1.264	1.236	6	1.056	1.167	1.090	1.121	1.677	
7	1.116	1.101	1.120	1.049	7	1.001	0.973	0.914	1.008	1.645	
8	1.017	1.057	1.159	1.122	8	0.901	1.041	1.053	0.991	1.487	
9	.805	.883	.878	.814	9	.873	.872	.857	.793	.422	
10	.543	.720	.775	.736	10	.706	.843	.811	.800	.232	
11	.414	.540	.632	.556	11	.587	.608	.686	.719	.352	
12	.305	.404	.353	.396	12	.505	.583	.473	.552	.371	
13	.171	.184	.276	.241	13	.354	.420	.433	.379	.255	
14	.228	.203	.248	.189	14	.355	.312	.358	.325	.309	
15	.103	.161	.211	.147	15	.246	.383	.349	.327	.148	
16	.104	.140	.209	.134	16	.258	.310	.364	.309		
17	.089	.133	.133	.199	17	.190	.316	.269	.344		
18	.000	.115	.123	.097	18	.130	.223	.257	.225		
19	.019	-.006	.099	.137	19	.000	.019	.130	.256		
c_n	0.730	0.746	0.759	0.725	0.628	c_n	0.768	0.756	0.745	0.727	0.670
c_m	.0032	-.0253	-.0520	-.0294	-.0269	c_m	-.0395	-.0701	-.0775	-.0727	-.0665
C_N^1	0.703	$x_{cp}^1 = 28.0$				$C_N^1 = 0.713$					
C_m^1	-.0210	$y_{cp}^1 = 42.2$				$C_m^1 = -.0607$					
C_b^1	.296					$C_b^1 = .301$					
									$x_{cp}^1 = 33.5$		
									$y_{cp}^1 = 42.1$		

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TABLE XV.- Concluded.

$$\left[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

(q) $M = 0.71$ $\alpha = 14.7^\circ$
 $c_{NA} = 0.69$ $\delta_{AL} = 0.8^\circ$ down
 $c_{\text{fl}} = 6.4^\circ$ $\delta_f = 6.4^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.396	1.589	1.630	1.460	1.057	1	1.873	1.222	1.270	1.241	1.427
2	1.970	1.624	1.416	1.397	1.077	2	1.499	1.239	1.028	1.162	1.394
3	1.675	1.521	1.441	1.344	0.937	3	1.368	1.123	1.053	1.111	1.244
4	1.756	1.520	1.370	1.370	0.820	4	1.407	1.145	0.918	1.119	0.991
5	1.396	1.408	1.193	1.303	0.696	5	1.217	1.034	0.925	1.038	0.742
6	1.159	1.339	1.144	1.098	0.696	6	0.900	1.037	0.887	0.967	0.693
7	1.129	1.101	1.081	0.958	0.634	7	0.858	0.763	0.832	0.864	0.550
8	1.015	1.055	1.009	1.017	0.484	8	0.794	0.895	0.802	0.869	0.459
9	0.915	0.923	0.858	0.833	0.428	9	0.790	0.743	0.727	0.712	0.373
10	0.744	0.864	0.831	0.772	0.314	10	0.637	0.773	0.683	0.641	0.228
11	0.636	0.718	0.754	0.698	0.397	11	0.530	0.557	0.643	0.624	0.361
12	0.492	0.640	0.498	0.550	0.386	12	0.430	0.556	0.444	0.526	0.290
13	0.323	0.425	0.497	0.364	0.364	13	0.327	0.389	0.443	0.378	0.406
14	0.321	0.326	0.417	0.416	0.304	14	0.343	0.379	0.412	0.283	0.287
15	0.269	0.350	0.383	0.322	0.231	15	0.330	0.392	0.407	0.284	0.253
16	0.300	0.267	0.388	0.274	0.211	16	0.391	0.375	0.450	0.336	
17	0.253	0.330	0.322	0.358	0.274	17	0.276	0.363	0.354	0.371	
18	0.217	0.226	0.319	0.248	0.228	18	0.228	0.308	0.351	0.270	
19	0.000	-	0.019	0.191	0.229	19	0.010	-	0.020	0.112	0.222

(r) $M = 0.70$ $\alpha = 16.4^\circ$
 $c_{NA} = 0.66$ $\delta_{AL} = 0.6^\circ$ up
 $c_{\text{fl}} = 6.7^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.873	1.222	1.270	1.241	1.427	1	1.499	1.239	1.028	1.162	1.394
2	1.499	1.239	1.028	1.162	1.394	2	1.368	1.123	1.053	1.111	1.244
3	1.368	1.123	1.053	1.111	1.244	3	1.407	1.145	0.918	1.119	0.991
4	1.407	1.145	0.918	1.119	0.991	4	1.217	1.034	0.925	1.038	0.742
5	1.217	1.034	0.925	1.038	0.742	5	0.900	1.037	0.887	0.967	0.693
6	0.900	1.037	0.887	0.967	0.693	6	0.858	0.763	0.832	0.864	0.550
7	0.858	0.763	0.832	0.864	0.550	7	0.794	0.895	0.802	0.869	0.459
8	0.794	0.895	0.802	0.869	0.459	8	0.790	0.743	0.727	0.712	0.373
9	0.790	0.743	0.727	0.712	0.373	9	0.637	0.773	0.683	0.641	0.228
10	0.637	0.773	0.683	0.641	0.228	10	0.530	0.557	0.643	0.624	0.361
11	0.530	0.557	0.643	0.624	0.361	11	0.430	0.556	0.444	0.526	0.290
12	0.430	0.556	0.444	0.526	0.290	12	0.327	0.389	0.443	0.378	0.406
13	0.327	0.389	0.443	0.378	0.406	13	0.364	0.364	0.343	0.343	0.287
14	0.364	0.364	0.343	0.343	0.287	14	0.304	0.304	0.304	0.304	0.253
15	0.304	0.304	0.304	0.304	0.253	15	0.232	0.232	0.232	0.232	
16	0.232	0.232	0.232	0.232	0.232	16	0.191	0.191	0.191	0.191	
17	0.191	0.191	0.191	0.191	0.191	17	0.176	0.176	0.176	0.176	
18	0.176	0.176	0.176	0.176	0.176	18	0.128	0.128	0.128	0.128	
19	0.128	0.128	0.128	0.128	0.128	19	0.010	-	0.020	0.112	

$x'_{cp} = 35.8$
 $y'_{cp} = 42.7$

$c_N' = 0.645$
 $c_m' = -0.0697$
 $c_b' = .275$

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TABLE XVI
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$$[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ]$$

$$(a) M = 0.74 \quad \alpha = 2.8^\circ \quad c_{N_A} = 0.01 \quad c_{N_L} = 0^\circ \quad c_{N_T} = 8.0^\circ$$

$$(b) M = 0.74 \quad \alpha = 3.0^\circ \quad c_{N_L} = 0^\circ \quad c_{N_T} = 8.0^\circ \quad c_{N_A} = 0.05$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	-0.128	-0.098	0.000	-0.077	-0.127	1	-0.013	0.024	0.102	0.025	-0.063
2	-0.039	0.076	-0.092	0.013	0.000	2	0.039	0.178	-	0.039	0.076
3	0.051	0.178	0.077	0.089	0.154	3	0.114	0.191	0.166	0.140	0.191
4	0.120	0.321	0.153	0.143	0.542	4	0.187	0.384	0.229	0.246	0.540
5	0.342	0.472	0.451	0.312	0.234	5	0.404	0.484	0.512	0.312	0.234
6	0.216	0.311	0.388	0.420	0.181	6	0.317	0.349	0.462	0.495	0.190
7	0.253	0.204	0.282	0.357	0.049	7	0.227	0.255	0.346	0.394	0.059
8	0.139	0.260	0.365	0.312	0.019	8	0.227	0.298	0.339	0.363	0.029
9	0.162	0.137	0.226	0.147	-0.078	9	0.182	0.146	0.236	0.175	-0.068
10	0.085	0.147	0.116	0.117	-0.029	10	0.112	0.176	0.135	0.126	-0.039
11	0.101	0.073	0.156	0.060	-0.010	11	0.080	0.073	0.166	0.079	-0.020
12	0.038	0.098	0.039	0.038	-0.010	12	0.104	0.117	0.087	0.048	-0.020
13	0.044	0.020	0.049	-0.010	-0.019	13	0.061	0.039	0.029	0.000	-0.019
14	0.126	0.069	0.081	0.010	-0.000	14	0.126	0.069	0.090	0.038	-0.010
15	0.010	0.000	0.010	-0.060	-0.010	15	0.029	0.019	0.000	-0.050	0.040
16	0.010	0.009	0.048	-0.029	0.016	16	0.029	0.019	0.029	-0.019	
17	0.030	0.048	0.029	0.019	0.017	17	0.010	0.058	0.029	0.029	
18	-0.009	0.049	0.029	-0.059	0.018	18	-0.028	0.039	0.038	-0.039	
19	0.019	0.019	0.081	0.060	0.019	19	0.019	0.029	0.060	0.060	

c_n	0.090	0.138	0.141	0.109	0.068	c_n	0.127	0.165	0.164	0.140	0.083
c_m	-0.0106	-0.0107	-0.0156	-0.0099	.0031	c_m	-0.0117	-0.0110	-0.0154	-0.0027	.0028
c_b	$c_{N'} = 0.11L$	$x'_{cp} = 30.9$	$y'_{cp} = 40.3$	$c_{N'} = -0.0070$		$c_{N'} = 0.141$	$x'_{cp} = 30.0$	$y'_{cp} = 40.2$			
	c_m	$= -0.0668$	c_b	$= .046$		c_m	$= -.0070$	c_b	$= .057$		

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TABLE XVI.- Continued.

 $[M \approx 0.76; \delta_T = 7^\circ \pm 1.5^\circ]$

(c) $M = 0.74$
 $c_{NA} = 0.11$

$\alpha = 3.7^\circ$
 $\delta_{AI} = 0^\circ$
 $\delta_T = 7.8^\circ$

(d) $M = 0.75$
 $c_{NA} = 0.16$

$\alpha = 4.4^\circ$
 $\delta_{AI} = 0.1^\circ$ down
 $\delta_T = 7.6^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.179	0.194	0.203	0.076	1	0.355	0.397	0.530	0.542	0.226	
2	•183	•254	•105	•257	2	•401	•426	•247	•382	•249	
3	•203	•355	•294	•267	3	•365	•490	•418	•441	•316	
4	•346	•435	•280	•311	4	•488	•545	•403	•423	•591	
5	•541	•597	•598	•373	5	•649	•680	•692	•506	•299	
6	•354	•439	•511	•608	6	•439	•499	•617	•716	•225	
7	•315	•292	•422	•418	7	•387	•340	•519	•515	•117	
8	•264	•336	•426	•479	8	•287	•397	•496	•513	•029	
9	•232	•205	•255	•243	9	•280	•261	•291	•222	•019	
10	•140	•224	•173	•136	10	•176	•261	•200	•192	•019	
11	•130	•119	•166	•129	11	•149	•100	•183	•108	•049	
12	•075	•127	•058	•048	12	•084	•165	•115	•085	•010	
13	•069	•079	•087	•010	13	•095	•058	•067	•029	•000	
14	•125	•059	•090	•019	14	•115	•097	•089	•038	•000	
15	•029	•048	•000	•040	15	•000	•000	•000	•030	•000	
16	•019	•019	•039	•049	16	•038	•047	•086	•010		
17	•030	•068	•019	•019	17	•020	•048	•029	•019		
18	- •019	•029	•019	•079	18	- •028	•039	•038	- •059		
19	•010	•019	•030	•089	19	•009	•038	•050	•059		
c_n	0.169	0.206	0.194	0.183	0.116	c_n	0.213	0.253	0.252	0.236	0.149
c_m	- .0083	- .0110	- .0125	.0022	.0023	c_m	- .0050	- .0109	- .0147	.0022	.0011

$c_{N'} = 0.178$	$x'_{cp} = 27.8$	$x'_{cp} = 27.1$
$c_m' = - .0049$	$y'_{cp} = 40.7$	$y'_{cp} = 41.1$
$c_b' = .073$		

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TABLE XVI.- Continued.

$$\left[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

$$(e) \quad M = 0.75 \quad \alpha = 4.9^\circ \\ C_{NA} = 0.19 \quad \delta_{AL} = 0^\circ \\ \delta_f = 7.5^\circ$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.494	0.709	0.972	0.919	0.313	1	0.765	1.309	1.424	1.346	0.731
2	•504	•490	•364	•522	•336	2	•729	•896	•837	•007	•542
3	•490	•515	•494	•478	•379	3	•659	•622	•626	•797	•425
4	•606	•608	•466	•539	•656	4	•783	•639	•573	•609	•621
5	•686	•718	•753	•567	•318	5	•803	•797	•794	•610	•401
6	•526	•601	•691	•778	•253	6	•607	•620	•733	•795	•250
7	•424	•403	•544	•565	•107	7	•457	•461	•614	•609	•164
8	•374	•461	•521	•500	•057	8	•432	•457	•614	•559	•038
9	•300	•290	•310	•270	-0.019	9	•356	•325	•355	•286	•038
10	•204	•222	•247	•192	•019	10	•193	•287	•235	•247	-0.038
11	•159	•163	•212	•147	•039	11	•196	•170	•229	•146	•097
12	•112	•135	•086	•123	•000	12	•120	•182	•067	•103	•019
13	•086	•097	•096	•000	•000	13	•111	•087	•123	•038	-0.037
14	•143	•097	•098	•067	-0.029	14	•151	•096	•071	•028	•038
15	•019	•048	•010	-0.069	•000	15	•028	•047	•038	-0.039	•029
16	•048	•019	•048	•000	•000	16	•047	•019	•028	-0.038	
17	-•010	•096	•010	•010	•020	17	•000	•057	•028	-0.019	
18	-•009	•029	•028	-0.020	•020	18	-	•009	•048	•009	-0.058
19	•028	•038	•030	•030	•020	19	•019	•028	•039	•068	
c_n	0.256	0.283	0.286	0.275	0.173	c_m	0.306	0.339	0.337	0.324	0.231
c_m	-•0066	-•0072	-•0088	•0040	•0031	c_b	-•0027	-•0028	.0003	.0141	.0033

$$(f) \quad M = 0.75 \quad \alpha = 5.6^\circ \\ C_{NA} = 0.24 \\ \delta_{AL} = 0.1^\circ \text{ down} \\ \delta_f = 7.3^\circ$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.765	1.309	1.424	1.346	0.731	2	0.729	0.896	0.837	0.007	0.542
3	•659	•622	•626	•797	•794	4	•783	•639	•573	•609	•621
5	•803	•797	•794	•610	•401	6	•803	•797	•794	•610	•401
7	•457	•461	•461	•614	•614	8	•432	•457	•614	•559	•038
9	•356	•325	•325	•286	•286	10	•356	•325	•355	•286	•038
11	•193	•287	•235	•247	-	12	•196	•170	•229	•146	•097
13	•111	•087	•123	•103	-	14	•111	•087	•123	•038	-0.037
15	•151	•096	•096	•028	-	16	•151	•096	•071	•028	•038
17	•028	•047	•047	•038	-	18	•028	•047	•038	•028	-0.038
19	•019	•028	•039	•068	-	20	•019	•028	•039	•068	
C_N'	0.258	0.283	0.286	0.275	0.173	C_m'	0.306	0.339	0.337	0.324	0.231
C_m'	-•0066	-•0072	-•0088	•0040	•0031	C_b'	-•0027	-•0028	.0003	.0141	.0033

$$x'_{cp} = 25.7 \\ y'_{cp} = 41.2$$

$$C_N' = 0.308 \\ C_m' = 0.043 \\ C_b' = .128$$

$$x'_{cp} = 23.6 \\ y'_{cp} = 41.5$$

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TABLE XVI.- Continued.

 $[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ]$
 $(g) M = 0.75$
 $c_{NA} = 0.31$
 $\alpha = 6.4^\circ$
 $\delta_{AL} = 0.1^\circ$ down
 $\delta_f = 7.1^\circ$
 $(h) M = 0.76$
 $c_{NA} = 0.36$
 $\alpha = 7.0^\circ$
 $\delta_{AL} = 0.1^\circ$ down
 $\delta_f = 7.0^\circ$

Orifice	Row				
	1	2	3	4	5
1	1.051	1.686	1.857	1.666	1.175
2	1.110	1.403	1.324	1.470	1.021
3	•894	•919	1.025	1.281	•499
4	•976	•776	•709	•988	•557
5	•887	•883	•841	•791	•409
6	•681	•694	•760	•781	•315
7	•518	•535	•675	•620	•173
8	•468	•519	•600	•608	•075
9	•365	•381	•393	•324	•019
10	•265	•315	•254	•256	•000
11	•186	•161	•247	•174	•358
12	•184	•210	•104	•094	•029
13	•119	•106	•114	•057	•009
14	•160	•086	•088	•019	•019
15	•037	•038	•036	•029	•010
16	•036	•055	•038	•029	•029
17	-	•020	•047	•028	•038
18	-	•018	•057	•000	-
19	-	•019	•019	•086	•068

c_n	0.368	0.405	0.393	0.391	0.291
c_m	.0008	.0020	.0042	.0218	.0114
c_b	0.370	0.397	0.414	0.417	0.398
c_N'	0.426	$x'_{cp} = 22.4$	$y'_{cp} = 41.7$		
c_m'	•0135				
c_b'	.154				

Orifice	Row				
	1	2	3	4	5
1	1.224	2.003	2.152	2.147	1.383
2	1.503	1.735	1.539	1.894	1.326
3	1.066	1.289	1.310	1.092	0.771
4	1.247	0.949	0.981	0.860	0.637
5	0.984	0.956	0.949	0.765	0.446
6	0.778	0.756	0.828	0.904	0.305
7	0.652	0.571	0.711	0.644	0.240
8	0.541	0.556	0.673	0.670	0.94
9	0.414	0.419	0.430	0.380	0.085
10	0.283	0.352	0.319	0.227	0.000
11	0.215	0.232	0.285	0.213	0.077
12	0.174	0.219	0.104	0.168	0.029
13	0.144	0.105	0.132	0.048	0.037
14	0.113	0.086	0.070	0.056	0.009
15	0.065	0.047	0.057	-	0.039
16	0.028	0.046	0.047	0.000	
17	0.010	0.057	0.038	0.028	
18	0.000	0.038	-	0.038	
19	0.009	0.038	0.049	0.048	

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TABLE XVI.- Continued.

$$[M \approx 0.76; \delta_F = 7^\circ \pm 1.5^\circ]$$

$$(1) M = 0.76 \quad \alpha = 7.6^\circ \quad \frac{c_{NL}}{c_{NA}} = 0.40 \quad \frac{\delta_{NL}}{\delta_F} = 6.9^\circ$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.418	2.320	2.447	2.454	1.643	1	1.561	2.435	2.519	2.476	1.962
2	1.707	2.038	1.883	2.001	1.442	2	1.802	2.126	2.001	2.151	1.832
3	1.286	1.358	1.758	1.982	.816	3	1.453	1.681	1.886	1.912	.856
4	1.411	1.051	1.445	1.596	.615	4	1.561	1.283	1.612	1.813	.618
5	1.059	1.069	.381	.927	.437	5	1.311	1.275	1.144	1.401	.479
6	.834	.789	.798	.872	.335	6	.969	.867	.955	.935	.340
7	.650	.607	.696	.630	.235	7	.703	.613	.665	.720	.288
8	.578	.556	.658	.668	.129	8	.584	.600	.628	.747	.127
9	.453	.400	.431	.372	.101	9	.439	.415	.436	.387	.082
10	.304	.391	.312	.306	.102	10	.327	.387	.327	.275	.101
11	.220	.210	.210	.288	.189	11	.246	.216	.294	.262	.158
12	.180	.261	.158	.183	.056	12	.187	.240	.110	.208	.065
13	.116	.103	.129	.075	.064	13	.123	.111	.128	.056	.063
14	.157	.151	.120	.129	.019	14	.164	.130	.111	.100	.018
15	.046	.028	.037	.019	.019	15	.027	.046	.046	—	.047
16	.055	.054	.083	.003	.003	16	.073	.045	.055	.028	
17	.000	.028	.018	.028	—	17	.019	.055	.027	.055	
18	.009	.037	.018	—	.028	18	—	.009	.046	.009	—
19	—	.009	.028	.096	.028	19	.036	.046	.036	.047	

Orifice	(J) M = 0.76					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.561	2.435	2.519	2.476	1.962	1	1.802	2.126	2.001	2.151	1.832
2	1.802	2.126	2.001	2.151	1.962	2	1.453	1.681	1.886	1.912	.856
3	1.453	1.681	1.886	1.912	.856	3	1.561	1.283	1.612	1.813	.618
4	1.561	1.283	1.612	1.813	.618	4	1.311	1.275	1.144	1.401	.479
5	1.311	1.275	1.144	1.401	.479	5	.969	.867	.955	.935	.340
6	.969	.867	.955	.935	.340	6	.703	.613	.665	.720	.288
7	.703	.613	.665	.720	.288	7	.584	.600	.628	.747	.127
8	.584	.600	.628	.747	.127	8	.439	.415	.436	.387	.082
9	.439	.415	.436	.387	.082	9	.327	.387	.327	.275	.101
10	.327	.387	.327	.275	.101	10	.246	.216	.294	.262	.158
11	.246	.216	.294	.262	.158	11	.187	.240	.110	.208	.065
12	.187	.240	.110	.208	.065	12	.123	.111	.128	.056	.063
13	.123	.111	.128	.056	.063	13	.164	.130	.111	.100	.018
14	.164	.130	.111	.100	.018	14	.130	.100	.100	.100	.018
15	.130	.100	.100	.100	.018	15	.027	.046	.046	—	.047
16	.073	.045	.055	.028	.000	16	.073	.045	.055	.028	
17	.019	.055	.027	.055	—	17	.019	.055	.027	.055	
18	—	.009	.046	.009	—	18	—	.009	.046	.009	—
19	.036	.046	.036	.047	—	19	.036	.046	.036	.047	

$$\begin{aligned} c_N' &= 0.520 \\ c_m' &= .0196 \\ c_b' &= .222 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 21.2 \\ y'_{cp} &= 42.6 \end{aligned}$$

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TABLE XVI.- Continued.

 $[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ]$

(k) $M = 0.76$
 $c_{NA} = 0.50$
 $\alpha = 8.7^\circ$
 $\delta_{AL} = 0.2^\circ$ down
 $\delta_f = 6.7^\circ$

(l) $M = 0.76$
 $c_{NA} = 0.55$
 $\alpha = 9.4^\circ$
 $\delta_{AL} = 0.6^\circ$ down
 $\delta_f = 6.6^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.700	2.471	2.582	2.002	1	1.963	2.551	2.690	2.542	1.811	
2	1.967	2.237	2.092	2.131	1.790	2	2.123	2.325	2.162	2.150	
3	1.543	1.950	1.963	1.977	1.045	3	1.747	2.113	2.068	1.754	
4	1.681	1.519	1.689	1.782	0.774	4	1.819	1.749	1.832	1.950	
5	1.306	1.450	1.234	1.501	0.501	5	1.535	1.726	1.298	1.528	
6	1.156	912	1.140	1.099	0.401	6	1.353	1.104	1.194	1.238	
7	772	647	903	0.956	0.296	7	0.949	0.757	1.034	0.977	
8	653	598	732	0.916	0.118	8	0.691	0.614	0.932	1.072	
9	476	413	452	0.477	0.109	9	0.545	0.462	0.610	0.661	
10	317	404	344	0.302	0.037	10	0.322	0.426	0.411	0.415	
11	245	215	321	0.187	0.158	11	0.279	0.263	0.326	0.326	
12	222	258	137	0.144	0.037	12	0.201	0.264	0.264	0.137	
13	131	120	120	0.17	0.046	13	0.145	0.126	0.126	0.169	
14	127	129	0.93	0.18	0.029	14	0.135	0.146	0.084	0.045	
15	0.36	0.45	0.46	-	0.056	15	0.089	0.045	0.063	0.063	
16	0.72	0.62	0.54	0.000	0.000	16	0.036	0.079	0.045	0.037	
17	0.00	0.045	0.027	0.013	0.000	17	0.056	0.072	0.036	0.036	
18	0.009	0.055	0.045	-	0.046	18	-	0.017	0.055	0.018	
19	0.36	0.18	0.085	0.047	0.000	19	0.027	0.018	0.065	0.018	
c_n	0.556	0.583	0.599	0.592	0.493	c_n	0.610	0.643	0.660	0.665	
c_m	.0148	.0171	.0169	.0379	.0126	c_m	.0206	.0189	.0168	.0268	

$c_N^I = 0.555$
 $c_m^I = .0230$
 $c_b^I = .236$

$x'^{op} = 20.9$
 $y'^{op} = 42.6$

$c_N^I = 0.616$
 $c_m^I = .0216$
 $c_b^I = .264$

$x'^{op} = 21.5$
 $y'^{op} = 42.9$

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TABLE XVI.- Continued.

$$\left[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

(m) $M = 0.76$
 $c_{NA} = 0.59$
 $\alpha = 9.9^\circ$
 $\delta_{AL} = 0^\circ$
 $\delta_f = 6.5^\circ$

(n) $M = 0.77$
 $c_{NA} = 0.62$
 $\alpha = 10.6^\circ$
 $\delta_{AL} = 0.4^\circ$
 $\delta_f = 6.7^\circ$

Orifice	Row					Row					
	1	2	3	4	5						
1	2.173	2.082	2.0767	2.0442	1.876	1	2.393	1.951	1.863	1.582	1.734
2	2.228	2.380	2.219	2.182	1.751	2	2.345	1.925	1.706	1.528	1.702
3	1.303	2.180	2.100	1.982	1.396	3	1.844	1.775	1.659	1.408	1.285
4	1.902	1.876	1.723	1.675	0.852	4	1.897	1.754	1.501	1.447	0.885
5	1.590	1.664	1.527	1.559	0.732	5	1.567	1.512	1.336	1.322	0.750
6	1.421	1.090	1.226	1.306	0.545	6	1.218	1.313	1.200	1.140	0.541
7	3.224	3.02	0.973	1.130	0.411	7	1.007	1.051	1.056	1.002	0.455
8	7.02	7.69	0.884	1.130	0.187	8	0.904	0.869	1.001	1.011	0.253
9	5.15	5.25	0.664	0.749	0.143	9	0.706	0.735	0.827	0.715	0.210
10	3.91	4.34	0.490	0.549	-	10	0.501	0.646	0.706	0.564	0.115
11	2.70	2.63	0.424	0.414	0.119	11	0.337	0.481	0.601	0.495	0.215
12	2.09	2.54	0.135	0.205	0.100	12	0.307	0.373	0.326	0.365	0.170
13	1.45	1.09	0.108	0.091	0.053	13	0.166	0.178	0.290	0.195	0.173
14	1.61	1.27	0.084	-	0.036	14	0.245	0.169	0.212	0.166	0.150
15	0.53	0.45	0.072	-	0.037	15	0.061	0.140	0.151	0.118	0.072
16	0.53	0.79	0.036	-	0.009	16	0.148	0.163	0.201	0.133	
17	0.47	0.45	0.018	-	0.027	17	0.091	0.149	0.114	0.183	
18	-	0.009	0.036	-	0.018	18	-	0.017	0.115	0.139	0.098
19	0.035	0.045	0.084	-	0.064	19	0.069	-	0.009	0.082	0.126
c_n	0.642	0.670	0.675	0.697	0.584	c_n	0.710	0.722	0.716	0.649	0.611
c_m	.0212	.0215	.0139	.0245	.0076	c_m	.0057	-.0151	-.0366	-.0233	-.0163

$c_{N'} = 0.642$
 $c_m' = .0221$
 $c_b' = .275$
 $x'_{cp} = 21.6$
 $y'_{cp} = 42.9$

$c_{N'} = 0.666$
 $c_m' = -.0113$
 $c_b' = .277$
 $x'_{cp} = 26.7$
 $y'_{cp} = 41.6$

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TABLE XVI. - Concluded.

$$[M \approx 0.76; \delta_f = 7^{\circ} \pm 1.5^{\circ}]$$

(o) $M = 0.76$
 $c_{NA} = 0.70$

$\alpha = 11.7^{\circ}$
 $\delta_{AL} = 1.2^{\circ}$ down
 $\delta_f = 6.8^{\circ}$

(p) $M = 0.76$
 $c_{NA} = 0.72$

$\alpha = 13.5^{\circ}$
 $\delta_{AL} = 0.1^{\circ}$ down
 $\delta_f = 7.0^{\circ}$

Orifice	Row					Row					
	1	2	3	4	5						
1	2.453	1.611	1.676	1.467	1.736	1	2.462	1.442	1.525	1.557	1.351
2	2.276	1.604	1.552	1.436	1.657	2	1.838	1.496	1.331	1.479	1.297
3	1.696	1.477	1.661	1.352	1.332	3	1.730	1.333	1.342	1.428	1.138
4	1.754	1.558	1.444	1.389	1.980	4	1.728	1.378	1.300	1.360	0.758
5	1.363	1.387	1.348	1.312	1.822	5	1.334	1.264	1.159	1.249	0.699
6	1.184	1.408	1.223	1.164	1.688	6	1.072	1.201	1.125	1.016	0.636
7	1.088	1.040	1.162	1.049	1.581	7	1.056	1.007	0.989	0.934	0.570
8	1.076	1.117	1.070	1.012	1.349	8	0.940	1.025	0.981	0.942	0.381
9	0.936	0.921	0.864	0.813	0.307	9	0.930	0.898	0.884	0.815	0.373
10	0.723	0.824	0.768	0.706	0.256	10	0.775	0.817	0.831	0.778	0.197
11	0.592	0.631	0.628	0.630	0.331	11	0.646	0.690	0.735	0.721	0.354
12	0.427	0.515	0.353	0.488	0.250	12	0.494	0.540	0.509	0.556	0.308
13	0.276	0.268	0.343	0.329	0.233	13	0.352	0.433	0.374	0.423	0.298
14	0.263	0.249	0.262	0.297	0.212	14	0.311	0.343	0.381	0.319	0.314
15	0.147	0.237	0.266	0.209	0.136	15	0.237	0.364	0.341	0.303	0.183
16	0.148	0.232	0.271	0.239	0.16	16	0.248	0.331	0.355	0.287	
17	0.091	0.219	0.194	0.253	0.17	17	0.185	0.311	0.267	0.354	
18	0.060	0.178	0.226	0.170	0.144	18	0.103	0.243	0.274	0.200	
19	0.026	0.018	0.082	0.144	0.000	19	0.000	-0.018	0.111	0.210	
c_n	0.785	0.781	0.750	0.713	0.694	c_n	0.779	0.764	0.751	0.732	0.628
c_m	-0.0202	-0.0490	-0.0524	-0.0528	-0.0417	c_m	-0.0394	-0.0710	-0.0814	-0.0665	-0.0595
c_b	0.725	-0.0391	$x'_{cp} = 30.4$	$y'_{cp} = 41.8$		c_b	0.725	$x'_{cp} = 33.2$	$y'_{cp} = 41.8$		
						c_b'	-0.0590				
						c_b''	.299				

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TABLE XVII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
 $[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$

Orifice	Row					Orifice	Row					
	1	2	3	4	5		1	2	3	4	5	
(a) $M = 0.80$ $c_{NA} = 0.00$	$\alpha = 2.6^\circ$ $\delta_{BL} = 0.1^\circ$ up $\delta_f = 8.8^\circ$	-0.268	-0.321	-0.221	-0.406	-0.288	1	-0.104	-0.066	0.035	-0.104	-0.149
1	-	.143	.000	-.216	-.094	-.115	2	.024	.069	-.119	.012	-.046
2	-	.058	.081	-.035	.023	.105	3	.069	.195	.127	.150	.127
3	-	.049	.257	.070	.059	1.088	4	.181	.348	.161	.164	1.105
4	-	.322	.452	.557	.136	.266	5	.445	.622	.971	.270	.344
5	-	.219	.341	.409	1.075	.129	6	.332	.374	.452	1.114	.163
6	-	.172	.197	.373	.312	.081	7	.274	.311	.417	.471	.080
7	-	.207	.236	.366	.449	-.026	8	.262	.305	.397	.422	.000
8	-	.138	.133	.214	.177	-.079	9	.201	.212	.240	.211	-.044
9	-	.102	.151	.114	.089	-.044	10	.161	.185	.148	.114	-.053
10	-	.091	.058	.098	.072	-.027	11	.073	.099	.150	.090	-.036
11	-	.069	.080	.071	.035	-.054	12	.119	.124	.070	.026	-.045
12	-	.040	.063	.035	-.018	-.017	13	.055	.098	.061	-.018	.017
13	-	.123	.089	.066	-.009	-.018	14	.157	.089	.065	.000	-.018
14	-	.000	.000	-.036	-.091	-.027	15	-	.035	.026	-.018	-.009
15	-	.019	.026	.035	.000	-.027	16	.052	.043	.009	-.026	-.026
16	-	.009	.009	.018	.000	-.027	17	-	.009	.026	.044	.000
17	-	.034	.000	.009	-.027	18	-	.008	-.017	.000	-.000	-.000
18	-	.000	.053	.009	.027	19	.017	.044	-.036	.000	-.000	-.000
c _n	0.081	0.123	0.121	0.145	0.073	c _n	0.142	0.176	0.166	0.177	0.105	
c _m	-.0128	-.0126	-.0147	-.0039	-.0046	c _m	-.0156	-.0149	-.0112	-.0001	-.0025	
$c_{N'} = 0.114$ $c_m' = -0.0095$ $c_b' = .050$												
$x'_{cp} = 33.3$ $y'_{cp} = 43.8$												
$c_{N'} = 0.158$ $c_m' = -0.0086$ $c_b' = .066$												
$x'_{cp} = 30.5$ $y'_{cp} = 41.8$												

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TABLE XVII.- Continued.

 $[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$

(c) $M = 0.80$
 $C_{NA} = 0.09$
 $\alpha = 3.5^\circ$
 $\delta_{AL} = 0.1^\circ$ up
 $\delta_f = 8.6^\circ$

Orifice	Row				
	1	2	3	4	5
1	0.023	0.033	0.138	-0.046	1
2	•083	•218	- •036	•081	2
3	•149	•241	•175	•230	3
4	•205	•416	•195	•187	4
5	•490	•713	1.105	•315	5
6	•423	•409	•451	1.147	6
7	•285	•345	•485	•505	7
8	•319	•328	•431	•410	-
9	•219	•229	•248	•194	-0.044
10	•127	•212	•174	•140	- •079
11	•127	•107	•158	•090	- •027
12	•077	•150	•085	•061	- •036
13	•076	•080	•070	•000	•017
14	•122	•052	•073	•009	- •018
15	•017	-	•061	- •009	- •009
16	•009	•043	•035	- •026	16
17	-	•009	•009	•044	- •009
18	-	•017	- •009	•000	- •009
19	•026	•044	•009	•018	18
					19
c_n	0.153	0.198	0.193	0.196	0.124
c_m	- .0108	- .0100	- .0134	- .0007	.0048

(d) $M = 0.80$
 $C_{NA} = 0.15$
 $\alpha = 4.2^\circ$
 $\delta_{AL} = 0.1^\circ$ up
 $\delta_f = 8.2^\circ$

Orifice	Row				
	1	2	3	4	5
1	0.231	0.220	0.323	0.287	0.103
2	•236	•333	•143	•267	•159
3	•264	•367	•301	•333	•231
4	•397	•486	•299	•363	1.061
5	•661	1.092	1.206	•360	•537
6	•515	•502	•676	1.135	•154
7	•376	•391	•566	•917	•089
8	•387	•410	•499	•504	•026
9	•338	•310	•300	•246	-
10	10	•152	•194	•182	- •079
11	11	•118	•116	•158	•009
12	12	•119	•106	•061	- •071
13	13	•071	•107	•079	- •018
14	14	•113	•097	•073	- •026
15	15	•017	•035	•035	- •072
16	16	- •009	•017	•026	•009
17	17	- •018	•079	•035	- •009
18	18	•000	•009	•000	- •009
19	19	•000	•061	•009	•009
c_n	0.212	0.250	0.238	0.236	0.163
c_m	- .0078	- .0084	- .0092	.0045	.0030

$x'_{cp} = 28.3$
 $y'_{cp} = 42.1$

$x'_{cp} = 26.3$
 $y'_{cp} = 41.3$

$C_N' = 0.223$
 $C_m' = - .0029$
 $C_b' = .092$

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TABLE XVII.- Continued.

$$[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$$

$$(e) M = 0.80 \quad \alpha = 4.9^\circ \quad \delta_{BL} = 0^\circ \quad \delta_{TL} = 8.1^\circ \\ C_{NA} = 0.21 \quad C_{RA} = 0.26 \quad C_{RL} = 0.26 \quad C_{RF} = 7.8^\circ$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.440	0.517	0.704	0.657	0.252	1	0.694	1.020	1.209	1.160	0.503
2	•449	•506	•298	•419	•262	2	•672	•665	•605	•766	•420
3	•483	•506	•463	•461	•312	3	•619	•543	•574	•574	•403
4	•579	•580	•403	•453	•1.123	4	•734	•624	•528	•573	•0.077
5	•799	1.209	1.231	•485	5	•865	1.206	1.228	•585	1.020	
6	•596	•596	1.050	1.149	•154	6	•697	•700	1.138	1.168	•188
7	•479	•507	•660	1.068	•125	7	•512	•528	•831	1.100	•124
8	•468	•457	•568	•692	•035	8	•535	•538	•679	1.030	•052
9	•329	•300	•320	•238	-	9	•392	•370	•336	•299	- 0.017
10	•212	•212	•235	•158	-	10	•237	•236	•295	•167	•000
11	•172	•141	•185	•153	-	11	•172	•190	•211	•134	- 0.009
12	•153	•204	•097	•104	-	12	•161	•168	•114	•095	- 0.044
13	•094	•062	•061	-	•027	13	•110	•110	•142	•070	•027
14	•157	•089	•090	-	•000	14	•166	•115	•073	•009	•052
15	•009	-	•009	-	•009	15	•009	•044	•018	-	•009
16	•026	-	•060	•079	-	16	•035	•026	•035	-	•027
17	-	•009	-	•026	•009	17	•018	•044	•017	•018	
18	-	•025	-	•009	•000	18	-	•026	-	•017	•000
19	•017	-	•061	•018	•009	19	•000	•087	-	•018	•027
c_n	0.274	0.307	0.306	0.294	0.224	c_n	0.325	0.350	0.368	0.373	0.277
c_m	- .0083	- .0076	- .0088	- .0057	.0032	c_m	- .0051	- .0033	- .0021	.0110	.0030
c_b	$C_N' = 0.281$	$x'_{cp} = 25.7$	$y'_{cp} = 41.8$			$C_N' = 0.336$	$x'_{cp} = 24.5$	$y'_{cp} = 42.8$			
						$C_m' = .0016$					
						$C_b' = .144$					

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TABLE XVII.- Continued.

 $[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$

(g) $M = 0.80$ $\alpha = 5.9^\circ$
 $c_{NA} = 0.32$ $\delta_{AL} = 0.1^\circ$
 $\delta_f = 7.8^\circ$ $\delta_f = 7.8^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.786	1.272	1.336	1.252	0.708	1	0.935	1.589	1.783	1.767	0.582
2	•766	•826	•795	•604	•568	2	1.060	•791	•747	•916	•454
3	•654	•654	•558	•689	•403	3	•779	•756	•611	•665	•460
4	•866	•670	•563	•620	1.043	4	•985	•762	•608	•655	1.111
5	•945	1.241	1.250	•663	1.011	5	•955	1.297	1.328	•652	1.037
6	•754	•723	1.126	1.203	•197	6	•834	•827	1.114	1.282	•256
7	•535	•563	•970	1.089	•133	7	•580	•654	1.119	1.156	•133
8	•535	•549	•713	1.123	•069	8	•626	•561	•780	1.158	•078
9	•374	•361	•354	•272	-	9	•428	•396	•354	•316	•009
10	•262	•308	•278	•202	-	10	•296	•299	•286	•202	•035
11	•154	•182	•193	•161	-	11	•208	•198	•228	•179	•027
12	•178	•168	•123	•087	•000	12	•178	•212	•114	•095	•009
13	•078	•089	•079	•035	•043	13	•110	•089	•087	•071	•034
14	•166	•089	•098	•017	-	14	•148	•106	•081	•009	•009
15	-	•026	•009	•009	-	15	•009	•000	•026	-	•054
16	-	•043	•043	•035	-	16	•035	•051	•009	•000	•000
17	-	•009	•017	•000	•009	17	-	•009	•035	•009	•009
18	-	•034	•000	-	•018	18	-	•034	-	•009	-
19	-	•009	•061	•036	•045	19	•000	•035	•036	•027	
c_n	0.349	0.376	0.391	0.394	0.295	c_n	0.397	0.409	0.420	0.438	0.306
c_m	- .0017	.0000	- .0013	.0090	.0055	c_m	.0004	.0016	.0032	.0142	.0008

(h) $M = 0.80$ $\alpha = 6.4^\circ$
 $c_{NA} = 0.32$ $\delta_{AL} = 0.1^\circ$
 $\delta_f = 7.6^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.935	1.589	1.783	1.767	0.582	2	1.060	•791	•747	•916	•454
2	•779	•756	•611	•665	•460	3	•795	•756	•611	•665	•460
3	•985	•762	•608	•655	1.111	4	•985	•762	•608	•655	1.111
4	•955	1.297	1.328	•652	1.037	5	•955	1.297	1.328	•652	1.037
5	•834	•827	1.114	1.282	•256	6	•834	•827	1.114	1.282	•256
6	•654	•654	1.119	1.156	•133	7	•654	•654	1.119	1.156	•133
7	•580	•580	•212	•212	•095	8	•580	•580	•212	•212	•095
8	•626	•561	•114	•114	•095	9	•626	•561	•114	•114	•095
9	•428	•396	•354	•354	•009	10	•428	•396	•354	•354	•009
10	•296	•299	•286	•286	•009	11	•296	•299	•286	•286	•009
11	•208	•198	•228	•228	•027	12	•208	•198	•228	•228	•027
12	•178	•212	•114	•114	•095	13	•178	•212	•114	•114	•095
13	•110	•089	•087	•087	•034	14	•110	•089	•087	•087	•034
14	•148	•106	•081	•081	•009	15	•148	•106	•081	•081	•009
15	•009	•009	•000	•000	•000	16	•009	•009	•000	•000	•000
16	•035	•018	•035	•035	•035	17	•035	•051	•009	•009	•009
17	•017	•000	•009	•009	•009	18	•034	-	•009	•009	•009
18	-	•018	-	•018	-	19	•000	•035	•036	•036	•027
c_n	0.349	0.376	0.391	0.394	0.295	c_n	0.397	0.409	0.420	0.438	0.306
c_m	- .0017	.0000	- .0013	.0090	.0055	c_m	.0004	.0016	.0032	.0142	.0008

$c_{NA}' = 0.358$ $x'_{cp} = 24.0$
 $c_m' = .0036$ $y'_{cp} = 42.7$
 $c_b' = .153$

$c_{NA}' = 0.391$ $x'_{cp} = 23.4$
 $c_m' = .0064$ $y'_{cp} = 42.4$
 $c_b' = .166$

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TABLE XVII.- Continued.

$$[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$$

(1) $M = 0.80$
 $c_{NA} = 0.36$
 $\alpha = 7.0^\circ$
 $\delta_{TL} = 0.2^\circ$ down
 $\delta_T = 7.5^\circ$

Orifice	Row				
	1	2	3	4	5
1	1.099	1.796	1.964	1.915	1.389
2	1.306	1.192	1.408	1.582	1.237
3	0.990	• 900	1.257	1.430	• 361
4	1.073	• 816	1.743	1.079	1.023
5	1.094	1.329	1.347	1.726	• 966
6	0.908	• 972	1.138	1.213	• 252
7	0.681	• 856	1.132	1.112	• 183
8	• 681	• 573	1.052	1.044	• 111
9	• 456	• 354	• 565	• 328	• 009
10	• 265	• 328	• 264	• 224	• 043
11	• 222	• 186	• 215	• 193	• 061
12	• 142	• 199	• 129	• 085	• 017
13	• 108	• 061	• 103	• 061	• 059
14	• 162	• 130	• 096	• 017	• 017
15	• 008	• 000	• 000	• 017	- • 009
16	• 026	• 084	• 051	- • 017	• 017
17	• 000	• 017	• 017	• 017	• 017
18	- • 017	• 017	- • 017	• 017	- • 017
19	• 025	• 034	• 018	• 018	• 018

Orifice	Row				
	1	2	3	4	5
1	1.165	1.975	1.975	2.068	1.565
2	1.499	1.784	1.614	1.715	1.434
3	1.237	1.122	1.424	1.528	1.070
4	• 361	• 294	1.950	1.315	1.004
5	4.023	5.181	1.293	1.344	1.188
6	• 966	1.051	1.118	1.267	1.379
7	6.252	7.835	9.33	1.153	1.289
8	• 183	8.858	6.29	1.174	1.136
9	8.044	11.111	4.644	4.05	3.53
10	9.009	10.289	3.10	2.80	1.86
11	10.043	11.195	2.24	1.193	0.661
12	11.213	12.141	1.173	1.137	0.009
13	12.112	13.141	1.07	0.95	0.043
14	13.059	14.154	0.78	1.03	0.026
15	14.017	15.025	0.26	0.09	- 0.044
16	15.009	16.025	0.67	0.68	- 0.017
17	- 0.017	17.036	0.34	0.34	- 0.017
18	18.017	- 0.017	0.17	0.08	- 0.009
19	19.018	- 0.008	0.43	0.35	0.009

Orifice	Row				
	1	2	3	4	5
1	1.165	1.975	1.975	2.068	1.565
2	1.499	1.784	1.614	1.715	1.434
3	1.237	1.122	1.424	1.528	1.070
4	• 361	• 294	1.950	1.315	1.004
5	4.023	5.181	1.293	1.344	1.188
6	• 966	1.051	1.118	1.267	1.379
7	6.252	7.835	9.33	1.153	1.289
8	• 183	8.858	6.29	1.174	1.136
9	8.044	11.111	4.644	4.05	3.53
10	9.009	10.289	3.10	2.80	1.86
11	10.043	11.195	2.24	1.193	0.661
12	11.213	12.141	1.173	1.137	0.009
13	12.112	13.141	0.78	1.03	0.026
14	13.059	14.154	0.26	0.09	- 0.044
15	14.017	15.025	0.67	0.68	- 0.017
16	15.009	16.025	0.34	0.34	- 0.017
17	- 0.017	17.036	0.17	0.08	- 0.009
18	18.017	- 0.017	0.08	0.035	0.009
19	19.018	- 0.008	0.43	0.35	0.009

(J) $M = 0.80$
 $c_{NA} = 0.41$
 $\alpha = 7.6^\circ$
 $\delta_{TL} = 0^\circ$
 $\delta_T = 7.4^\circ$

Orifice	Row				
	1	2	3	4	5
1	0.489	0.504	0.571	0.519	0.449
2	.0078	.0146	.0107	.0326	.0164

Orifice	Row				
	1	2	3	4	5
1	0.489	0.504	0.571	0.519	0.449
2	.0078	.0146	.0107	.0326	.0164

C_N¹ = 0.440
C_m¹ = .0107
C_b¹ = .189

Orifice	Row				
	1	2	3	4	5
1	0.485	0.485	0.371	0.371	0.371
2	.0050	.0244	.0092	.0092	.0092

x'_{ep} = 22.6
y'_{ep} = 42.8

Orifice	Row				
	1	2	3	4	5
1	0.485	0.485	0.371	0.371	0.371
2	.0050	.0244	.0092	.0092	.0092

C_N¹ = 0.493
C_m¹ = .0185
C_b¹ = .212

Orifice	Row				
	1	2	3	4	5
1	0.489	0.504	0.571	0.519	0.449
2	.0078	.0146	.0107	.0326	.0164

x'_{ep} = 21.2
y'_{ep} = 42.9

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TABLE XVII.- Continued.

 $[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$

(k) $M = 0.80$
 $c_{NA} = 0.46$

$\alpha = 8.3^\circ$
 $\delta_{BL} = 0^\circ$
 $\delta_T = 7.2^\circ$

Orifice	Row				
	1	2	3	4	5
1	1.284	2.105	2.205	1.670	1
2	1.711	1.911	1.855	1.561	2
3	1.274	1.542	1.620	1.712	3
4	1.453	1.250	1.444	1.573	4
5	1.264	1.388	1.580	1.315	5
6	1.147	1.170	1.536	1.540	6
7	0.998	1.030	1.305	0.926	7
8	0.932	0.923	1.257	0.935	8
9	0.533	0.429	0.483	0.608	9
10	0.288	0.300	0.254	0.453	10
11	0.212	0.201	0.214	0.201	11
12	0.166	0.172	0.103	0.067	12
13	0.092	0.130	0.102	0.000	13
14	0.086	0.144	0.071	-0.085	14
15	0.008	0.051	0.017	-0.070	15
16	0.059	0.050	0.059	-0.017	16
17	0.009	0.034	0.034	-0.042	17
18	-0.016	0.034	0.008	-0.035	18
19	-0.008	0.042	0.053	-0.017	19

Orifice	Row				
	1	2	3	4	5
1	1.323	2.117	2.233	2.240	1.718
2	1.726	1.880	1.819	1.937	1.620
3	1.346	1.647	1.680	1.771	1.352
4	1.528	1.401	1.471	1.635	1.028
5	1.292	1.404	1.617	1.374	0.733
6	1.208	1.210	1.606	1.589	0.423
7	1.038	1.070	1.478	0.922	0.284
8	1.005	1.055	1.164	0.942	0.135
9	0.558	0.444	0.567	0.691	0.085
10	0.303	0.316	0.278	0.476	0.034
11	0.246	0.208	0.222	0.321	0.130
12	0.148	0.148	0.094	0.101	0.086
13	0.114	0.077	0.076	0.034	0.075
14	0.118	0.094	0.063	-0.093	0.026
15	0.042	0.042	0.017	-0.034	-0.096
16	0.034	0.034	0.050	-0.025	-0.034
17	0.009	0.009	0.042	0.017	0.025
18	-0.016	0.016	0.008	-0.008	-0.052
19	0.025	0.042	0.044	0.052	

Orifice	Row				
	1	2	3	4	5
c_n	0.536	0.576	0.620	0.593	0.509
c_m	.0113	.0157	.0173	.0364	.0168
c_n'	0.556	$x'_{cp} = 21.2$	$y'_{cp} = 43.0$	$c_n = 0.580$	$x'_{cp} = 21.3$
c_m'	.0212			$c_m = .0217$	$y'_{cp} = 43.2$
c_b'	.239			$c_b = .250$	

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TABLE XVII.- Continued.

$$\left[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

$$(m) \quad M = 0.80 \quad \alpha = 8.6^\circ \quad \delta_{AL} = 0.2^\circ \text{ down} \quad \delta_f = 7.2^\circ \\ C_{NA} = 0.51 \quad C_m = 0.56 \quad C_b = 7.2$$

Orifice	Row				
	1	2	3	4	5
1	1.342	2.147	2.243	2.260	1.743
2	1.767	1.981	1.800	1.916	1.625
3	1.365	1.695	1.717	1.765	1.337
4	1.558	1.486	1.477	1.662	.993
5	1.322	1.400	1.621	1.424	.709
6	1.250	1.253	1.632	1.528	.459
7	1.081	1.036	1.474	.946	.341
8	1.016	1.077	1.206	.966	.142
9	.595	.507	.620	.675	.092
10	.333	.321	.315	.522	.059
11	.234	.230	.228	.269	.128
12	.179	.186	.076	.141	.077
13	.105	.102	.067	.042	.091
14	.142	.068	.070	-	.108
15	.025	.042	.025	-	.061
16	.050	.033	.042	-	.051
17	.017	.059	.017	-	.008
18	-	.016	.008	.017	-
19	-	.025	.017	.061	.052

$$(n) \quad M = 0.81 \quad \alpha = 9.4^\circ \quad \delta_{AL} = 0.2^\circ \text{ down} \quad \delta_f = 7.1^\circ \\ C_{NA} = 0.56 \quad C_m = .0214 \quad C_b = .255$$

Orifice	Row				
	1	2	3	4	5
1	1.550	2.264	2.377	2.349	1.859
2	1.985	2.084	2.010	1.708	
3	1.506	1.833	1.835	1.857	1.380
4	1.670	1.627	1.574	1.770	.952
5	1.473	1.595	1.736	1.540	.703
6	1.305	1.331	1.661	1.504	.512
7	1.170	1.191	1.329	1.014	.389
8	1.115	1.157	1.066	1.024	.223
9	9	6.51	.595	.842	.083
10	10	3.38	.385	.602	.601
11	11	2.76	.251	.393	.417
12	12	2.10	.218	.083	.110
13	13	1.104	.110	.058	.065
14	14	1.141	.101	.054	.075
15	15	.057	.041	-	.058
16	16	.050	.049	.017	.017
17	17	.009	.066	.008	.025
18	18	-	.016	.025	.008
19	19	.025	.041	.078	.043

$$x'_{cp} = 21.4 \\ y'_{cp} = 43.0$$

$$C_N' = 0.647 \\ C_m' = .0182 \\ C_b' = .277$$

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TABLE XVII.- Continued.

$$[M \approx 0.80; \delta_f = 7^{\circ} \pm 1.5^{\circ}]$$

(o) $M = 0.80$
 $\alpha = 10.2^{\circ}$
 $Q_{AL} = 0.2^{\circ}$ down
 $Q_f = 7.0^{\circ}$

Orifice	Row				
	1	2	3	4	5
1	1.897	2.400	2.497	2.436	1.973
2	2.171	2.179	1.993	2.038	1.788
3	1.640	2.003	1.961	1.939	1.414
4	1.812	1.786	1.752	1.785	0.894
5	1.573	1.708	1.535	1.521	0.717
6	1.437	1.488	1.362	1.308	0.566
7	1.333	1.223	1.223	1.108	0.486
8	1.223	0.864	1.097	1.067	0.292
9	0.709	0.668	0.798	0.860	0.193
10	0.430	0.524	0.649	0.740	0.067
11	0.313	0.349	0.514	0.575	0.179
12	0.245	0.254	0.269	0.341	0.153
13	0.128	0.128	0.159	0.161	0.099
14	0.159	0.102	0.164	0.075	0.118
15	0.041	0.050	0.059	0.017	0.069
16	0.075	0.049	0.117	0.042	0.042
17	0.044	0.067	0.042	0.108	0.087
18	-0.024	0.034	0.100	0.034	0.18
19	0.033	0.033	0.131	0.077	0.19

(p) $M = 0.80$
 $\alpha = 11.6^{\circ}$
 $Q_{AL} = 0.1^{\circ}$ down
 $Q_f = 7.1^{\circ}$

Orifice	Row				
	1	2	3	4	5
1	2.267	2.495	2.391	2.360	1.736
2	1.842	1.915	1.954	1.246	1.650
3	2.012	1.990	1.690	1.249	1.240
4	1.664	1.535	1.148	1.179	0.795
5	1.583	1.323	1.148	1.102	0.617
6	1.532	1.016	0.977	0.959	0.536
7	0.909	0.877	0.809	0.979	0.392
8	0.640	0.694	0.894	0.828	0.294
9	0.480	0.627	0.909	0.784	0.169
10	0.444	0.524	0.727	0.689	0.308
11	0.376	0.442	0.557	0.549	0.282
12	0.302	0.290	0.412	0.374	0.265
13	0.277	0.247	0.391	0.276	0.237
14	0.166	0.210	0.322	0.252	0.173
15	0.150	0.214	0.360	0.279	0.202
16	0.087	0.201	0.201	0.205	0.301
17	0.024	0.102	0.041	0.105	0.164
18	0.017	0.017	0.017	0.017	0.017

$C_N' = 0.697$
 $C_m' = .0082$
 $C_b' = .299$

$x'_{cp} = 23.8$
 $y'_{cp} = 42.9$

$C_N' = 0.743$
 $C_m' = -.0266$
 $C_b' = .310$

$x'_{cp} = 28.6$
 $y'_{cp} = 41.7$

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TABLE XVII.- Continued.

$$[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$$

(q) $C_N = 0.80$
 $C_{NA} = 0.71$
 $\delta_{BL} = 0.2^\circ$ down
 $\delta_T = 7.2^\circ$

$\alpha = 12.0^\circ$
 $\delta_{BL} = 0.2^\circ$ down
 $C_N = 0.74$
 $\alpha = 15.0^\circ$
 $\delta_{BL} = 0.8^\circ$ down
 $\delta_T = 7.3^\circ$

Orifice	Row				
	1	2	3	4	5
1	2.423	1.852	2.033	1.430	1
2	2.436	1.814	1.845	1.312	2
3	1.859	1.658	1.754	1.360	3
4	1.984	1.727	1.605	1.260	4
5	1.591	1.471	1.344	1.233	5
6	1.342	1.471	1.180	1.123	6
7	1.138	1.159	1.154	1.023	7
8	1.116	1.112	1.087	1.033	8
9	0.983	0.957	0.962	0.853	9
10	0.779	0.829	0.951	0.817	10
11	0.659	0.689	0.610	0.712	11
12	0.561	0.523	0.519	0.605	12
13	0.350	0.353	0.450	0.420	13
14	0.330	0.258	0.355	0.362	14
15	0.234	0.296	0.316	0.306	15
16	0.253	0.282	0.346	0.324	16
17	0.194	0.313	0.280	0.312	17
18	0.115	0.223	0.286	0.276	18
19	0.033	0.025	0.123	0.208	19

c_n	0.877	0.838	0.855	0.760	0.690
c_m	-0.061	-0.0528	-0.0762	-0.0770	-0.0725
C_N^1	0.782			$x'_{op} = 31.6$	
C_m^1	-0.0515			$y'_{op} = 41.3$	
C_b^1	.323				

Orifice	Row				
	1	2	3	4	5
1	2.489	1.578	1.792	1.372	1.119
2	2.042	1.594	1.441	1.307	1.112
3	1.785	1.471	1.560	1.214	0.992
4	1.813	1.505	1.496	1.249	0.820
5	1.449	1.383	1.257	1.145	0.697
6	1.203	1.324	1.114	1.065	0.653
7	1.103	1.124	1.029	0.942	0.574
8	0.992	1.064	0.975	0.985	0.476
9	0.902	0.922	0.901	0.766	0.427
10	0.769	0.845	0.800	0.721	0.267
11	0.691	0.705	0.792	0.701	0.427
12	0.624	0.595	0.618	0.576	0.400
13	0.336	0.407	0.382	0.557	0.370
14	0.375	0.367	0.381	0.462	0.350
15	0.324	0.287	0.341	0.457	0.327
16	0.340	0.385	0.511	0.361	
17	0.249	0.307	0.385	0.357	
18	0.165	0.277	0.424	0.305	
19	0.000	0.017	0.133	0.272	

$C_N^1 = 0.756$
 $C_m^1 = -0.0681$
 $C_b^1 = .310$
 $x'_{ep} = 34.0$
 $y'_{ep} = 41.0$

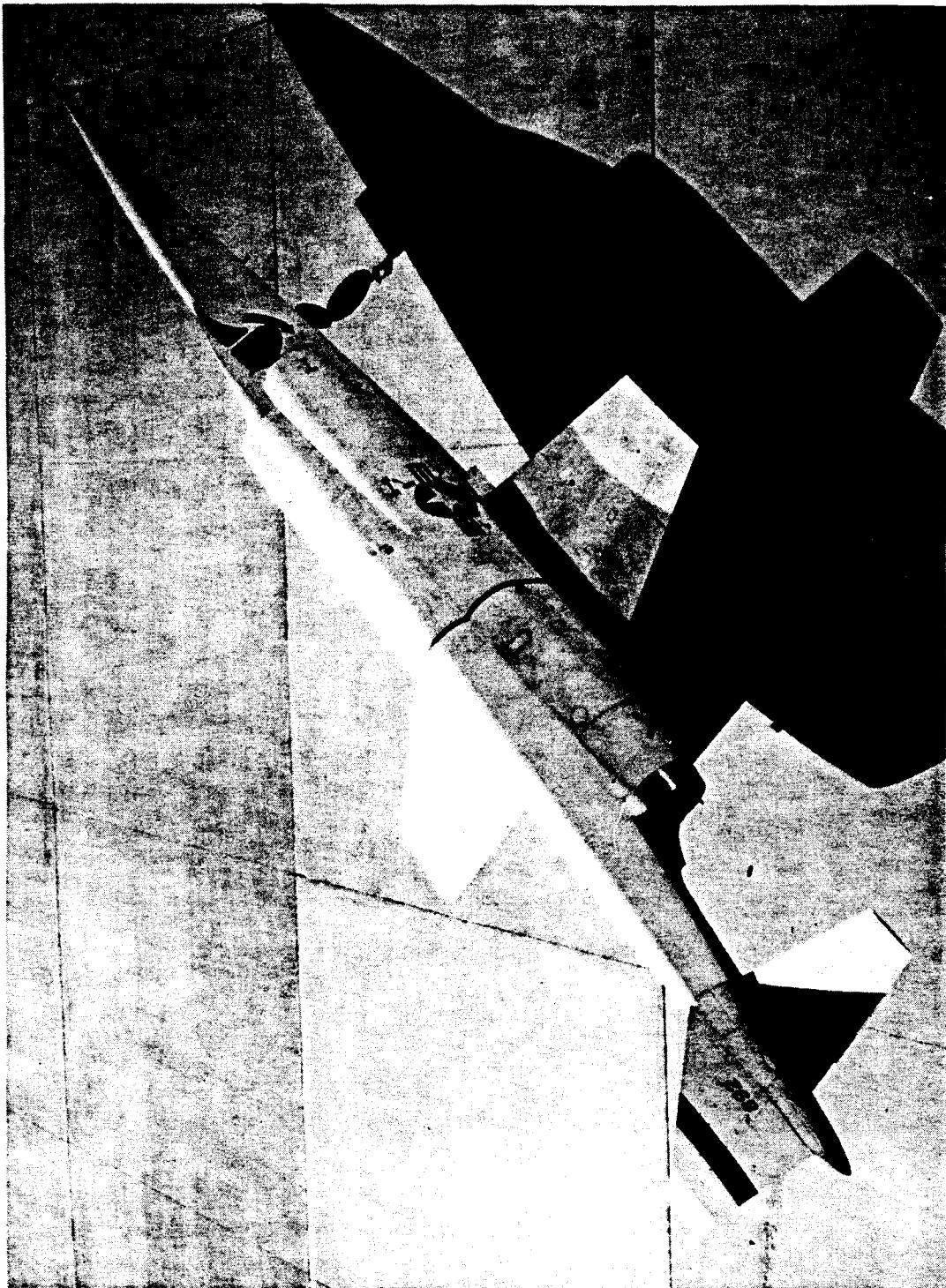
TABLE XVII.- Concluded.

$$\left[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

$$(s) \quad M = 0.79 \quad \alpha = 15.8^\circ \\ C_{M_A} = 0.72 \quad \delta_{AL} = 0.9^\circ \text{ down} \\ C_T = 7.1^\circ$$

Orifice	Row				
	1	2	3	4	5
1	2.0494	1.0448	1.0622	1.0313	1.0115
2	1.707	1.424	1.392	1.247	1.075
3	1.639	1.390	1.411	1.200	0.942
4	1.671	1.321	1.336	1.211	0.834
5	1.402	1.245	1.254	1.119	0.684
6	1.036	1.184	1.165	1.027	0.640
7	1.054	0.973	1.001	0.903	0.551
8	0.920	0.979	1.026	0.946	0.436
9	0.872	0.850	0.864	0.745	0.387
10	0.766	0.842	0.638	0.683	0.295
11	0.714	0.692	0.736	0.626	0.403
12	0.611	0.626	0.536	0.546	0.394
13	0.456	0.455	0.491	0.427	0.364
14	0.430	0.410	0.433	0.402	0.399
15	0.348	0.404	0.443	0.329	0.301
16	0.333	0.429	0.429	0.364	
17	0.277	0.344	0.379	0.376	
18	0.200	0.331	0.358	0.307	
19	0.025	0.034	0.107	0.300	
C_A	0.810	0.781	0.791	0.704	0.612
C_m	-0.0615	-0.0866	-0.0932	-0.0795	-0.0787
C_N'	0.723			$x'_{cp} = 35.0$	
C_m'	-0.0726			$y'_{cp} = 41.1$	
C_D'	.297				

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Figure 1.- Photograph of the Douglas X-3 research airplane.

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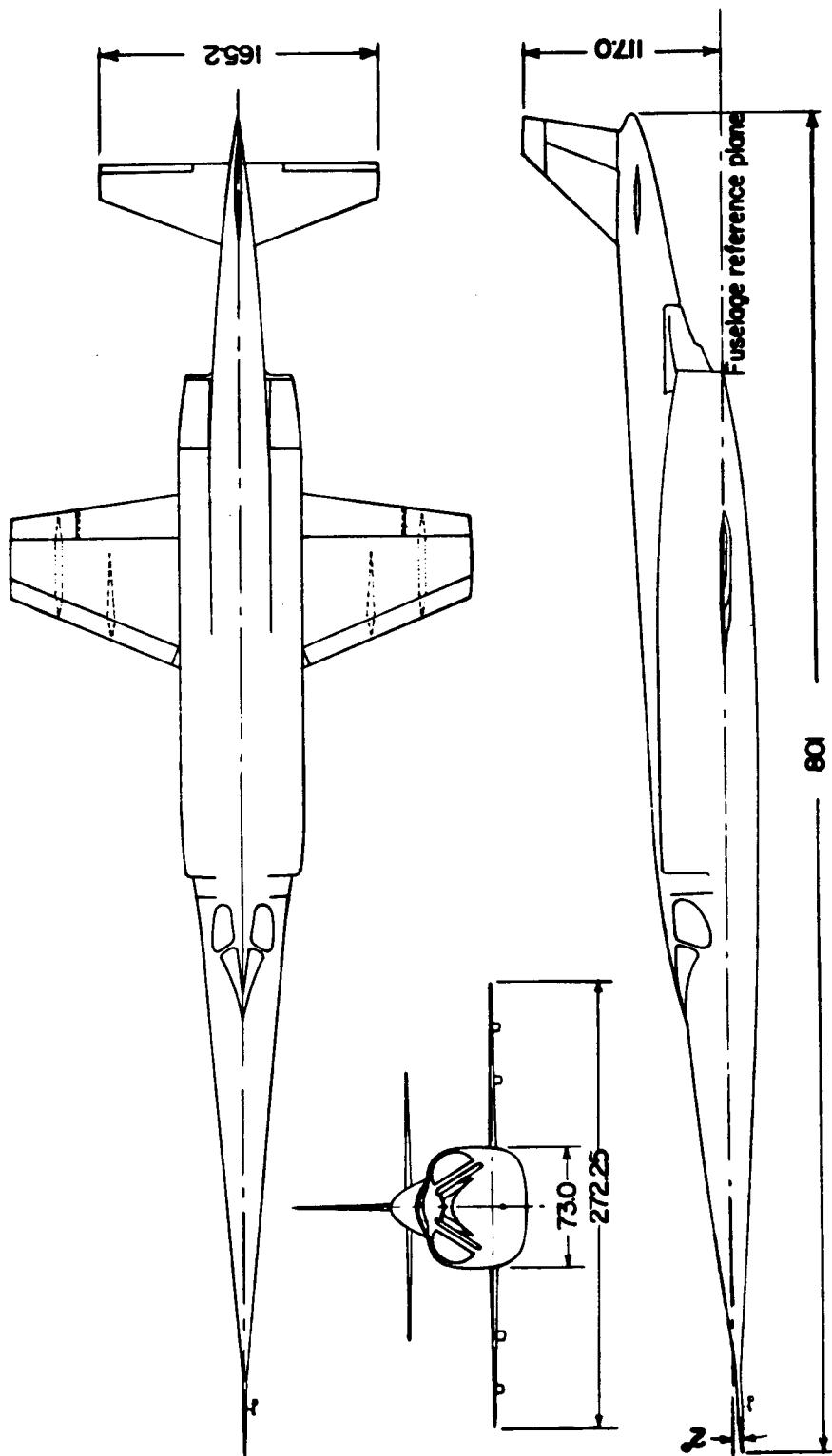


Figure 2.- Three-view drawing of the X-3 airplane. All dimensions are in inches.

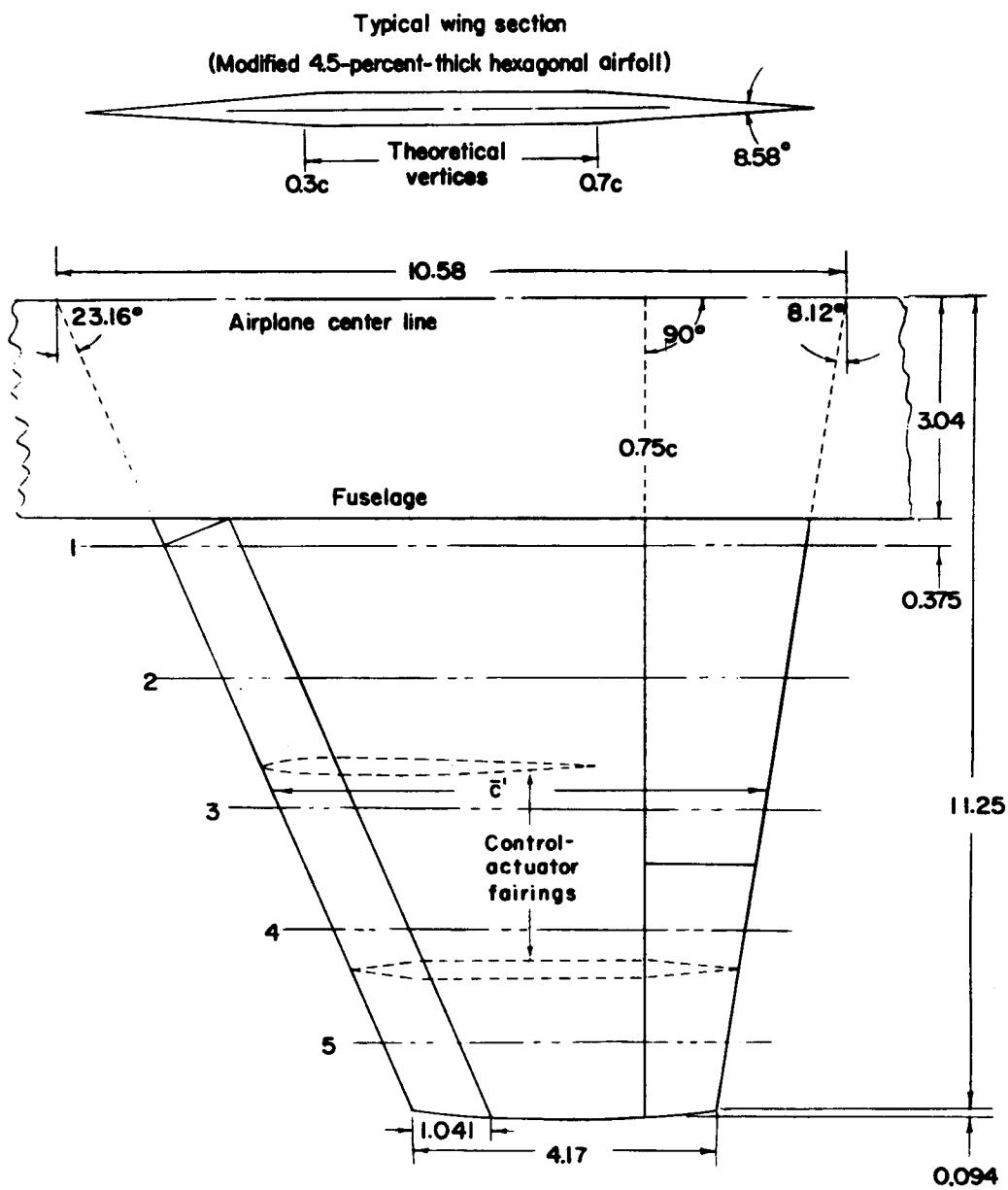


Figure 3.- Drawing of the left wing of the Douglas X-3 airplane showing the spanwise location of the orifice rows. All dimensions are in feet unless otherwise stated.

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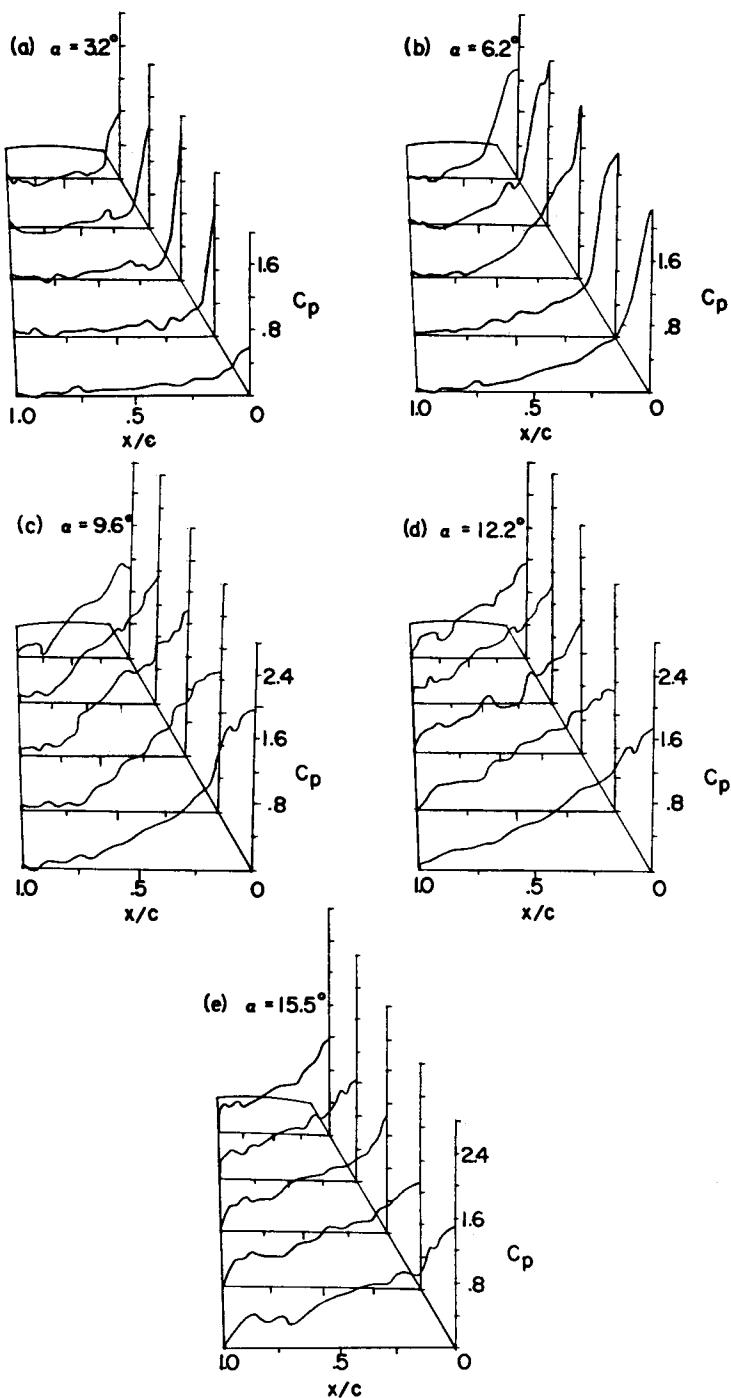


Figure 4.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.71$.

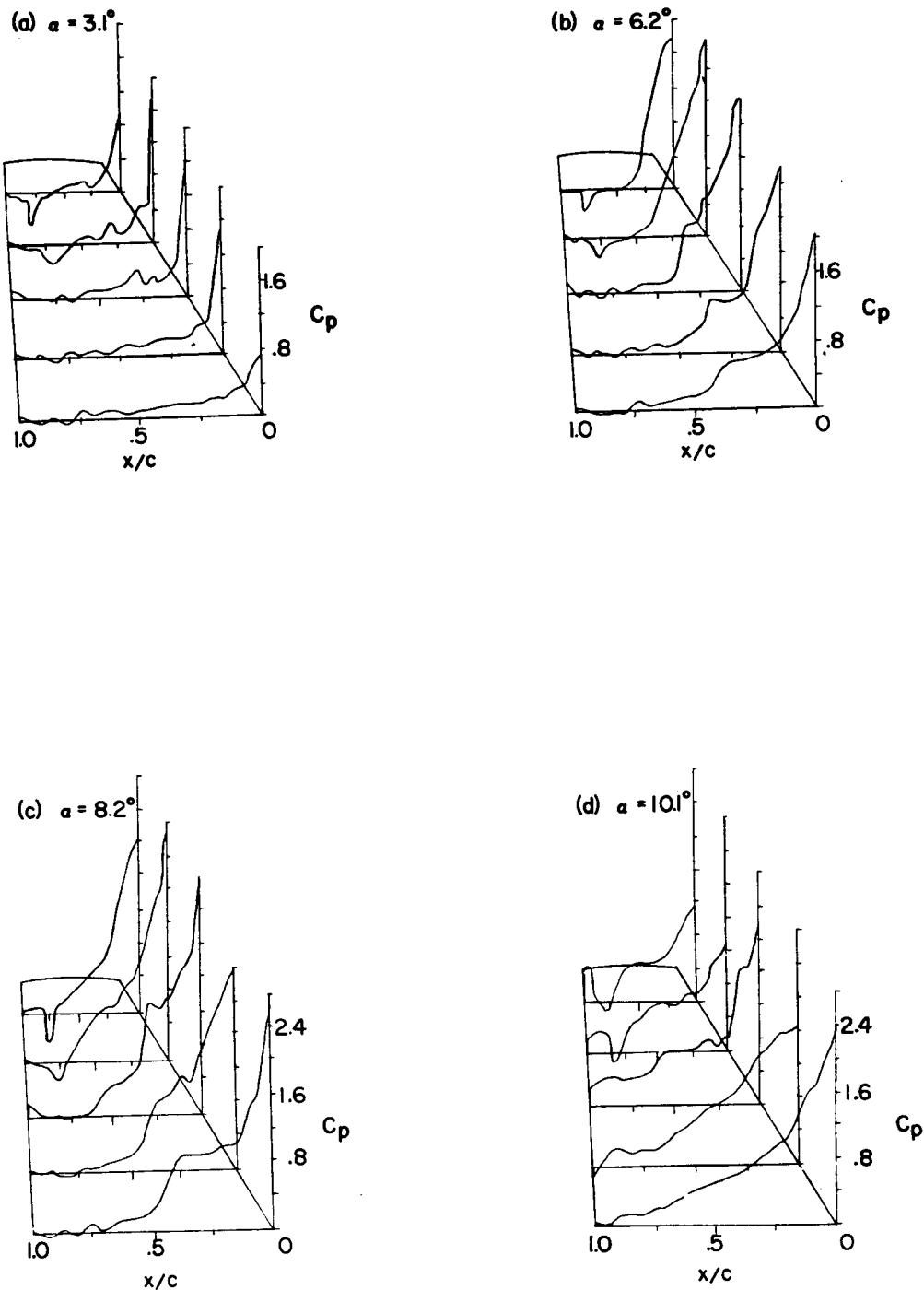


Figure 5.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.83$.

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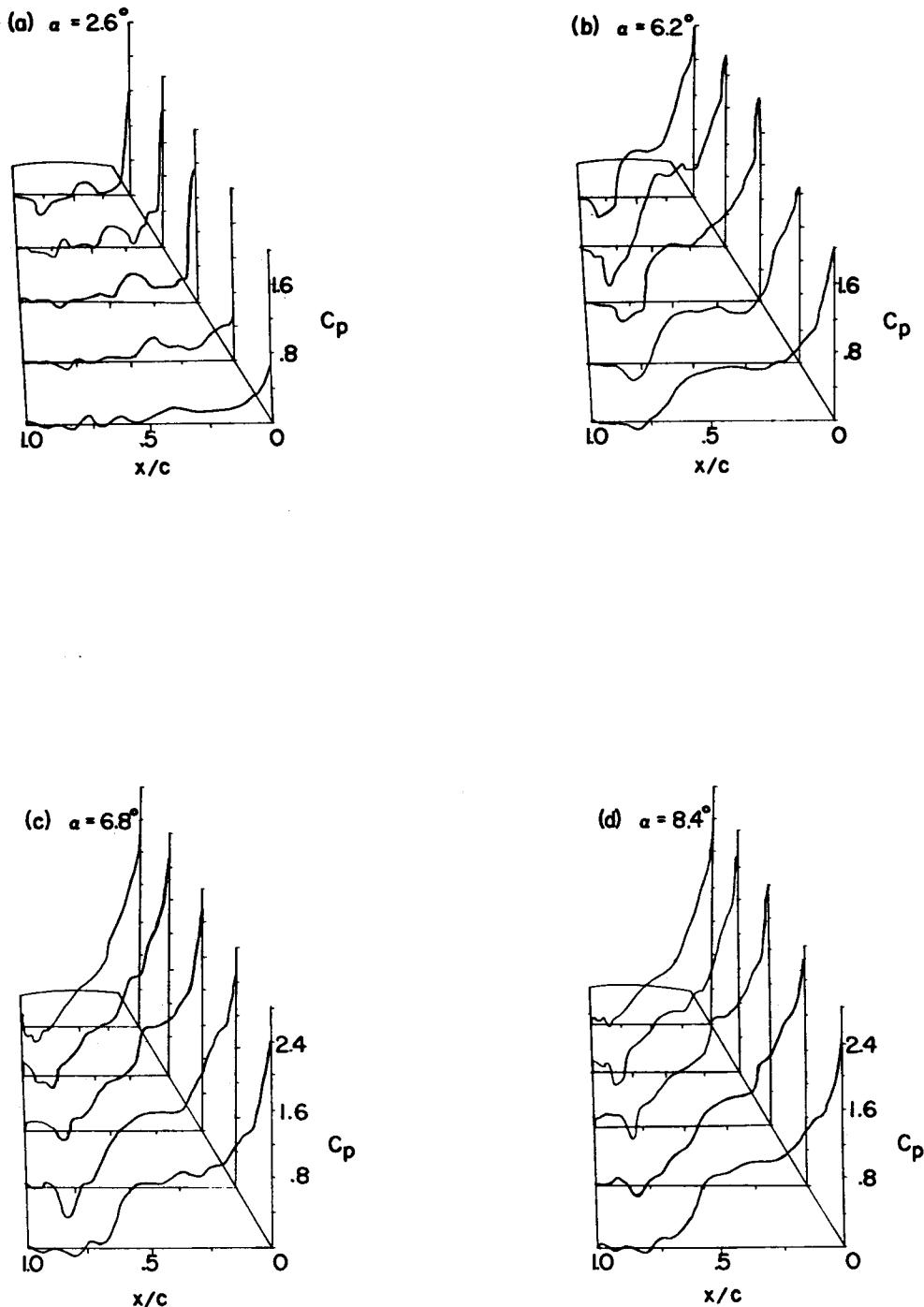


Figure 6.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.88$.

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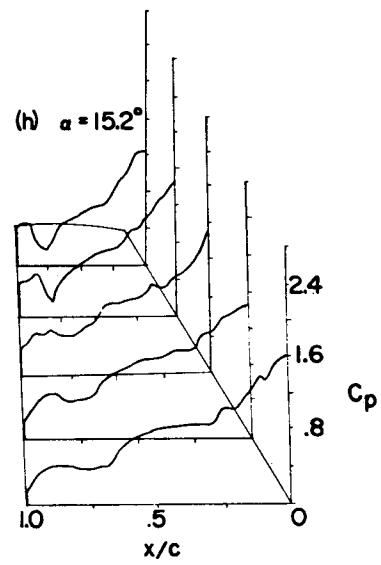
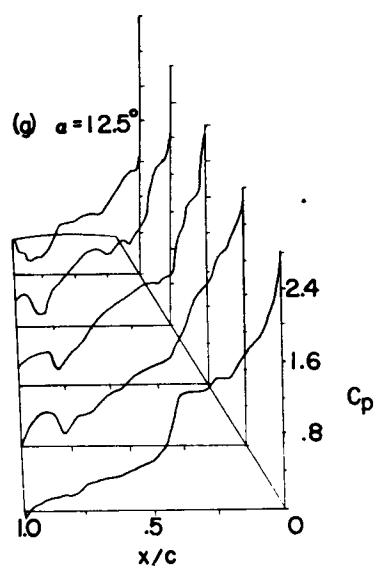
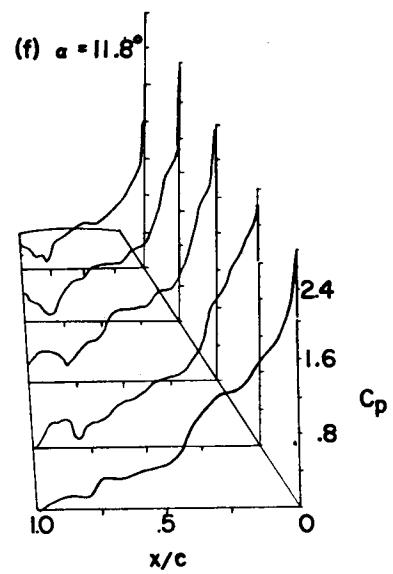
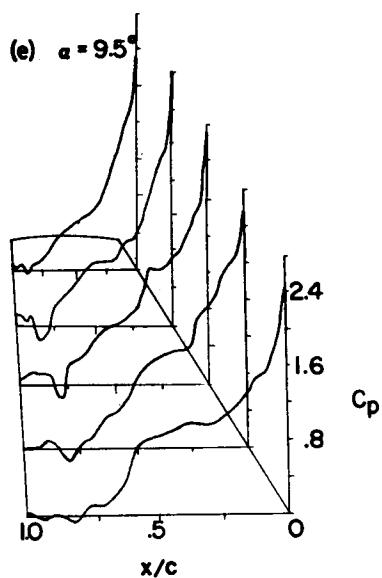


Figure 6.- Concluded.

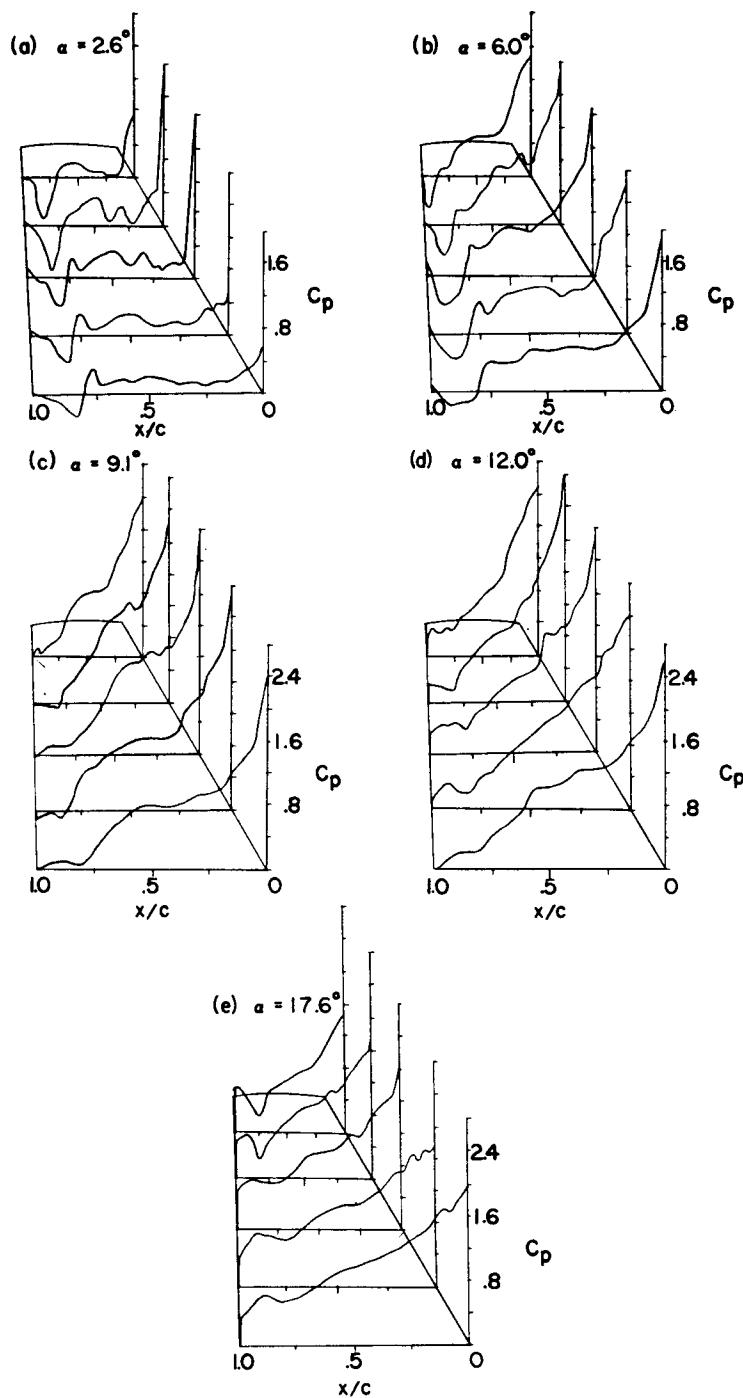


Figure 7.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.92$.

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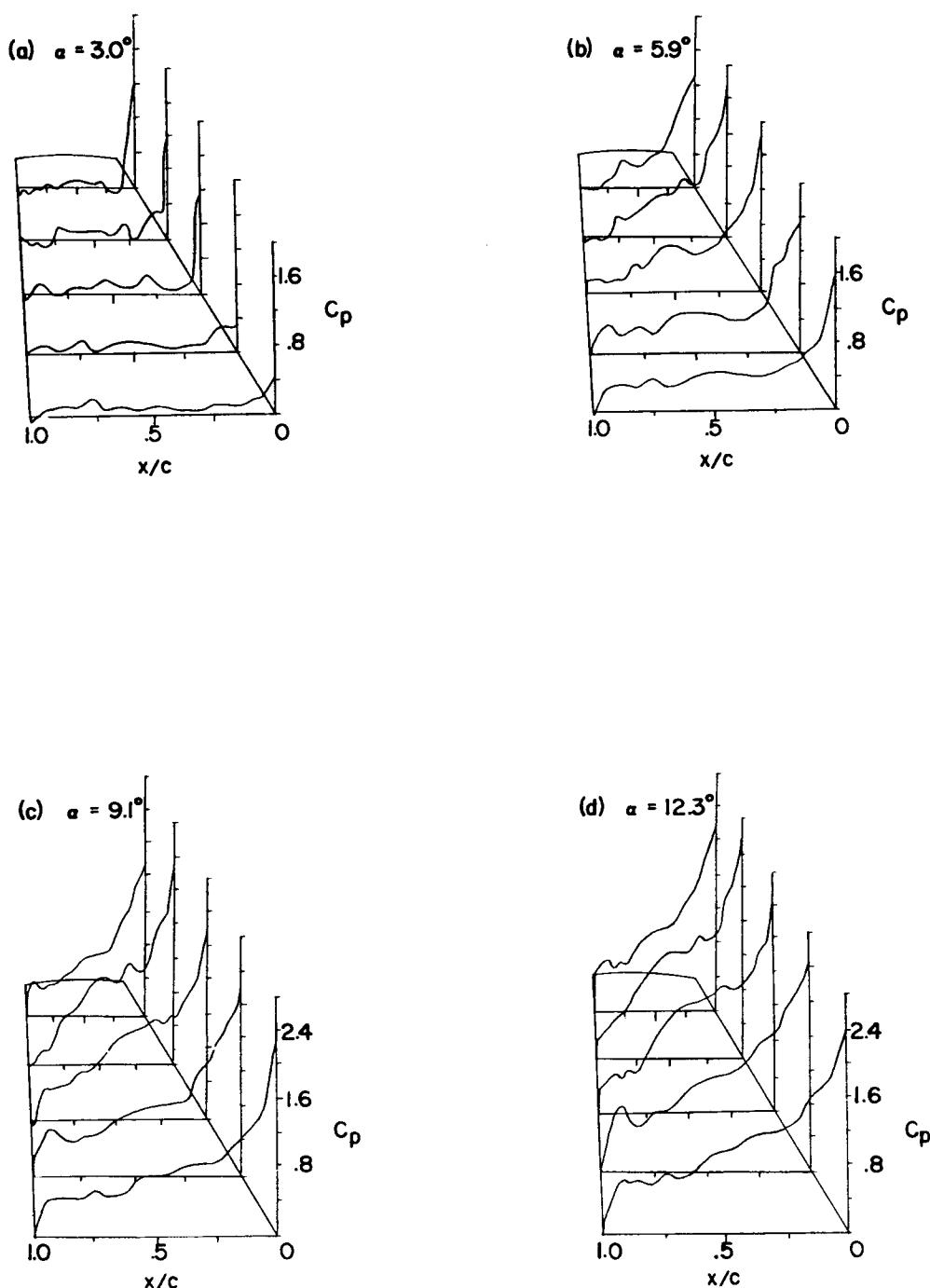


Figure 8.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.99$.

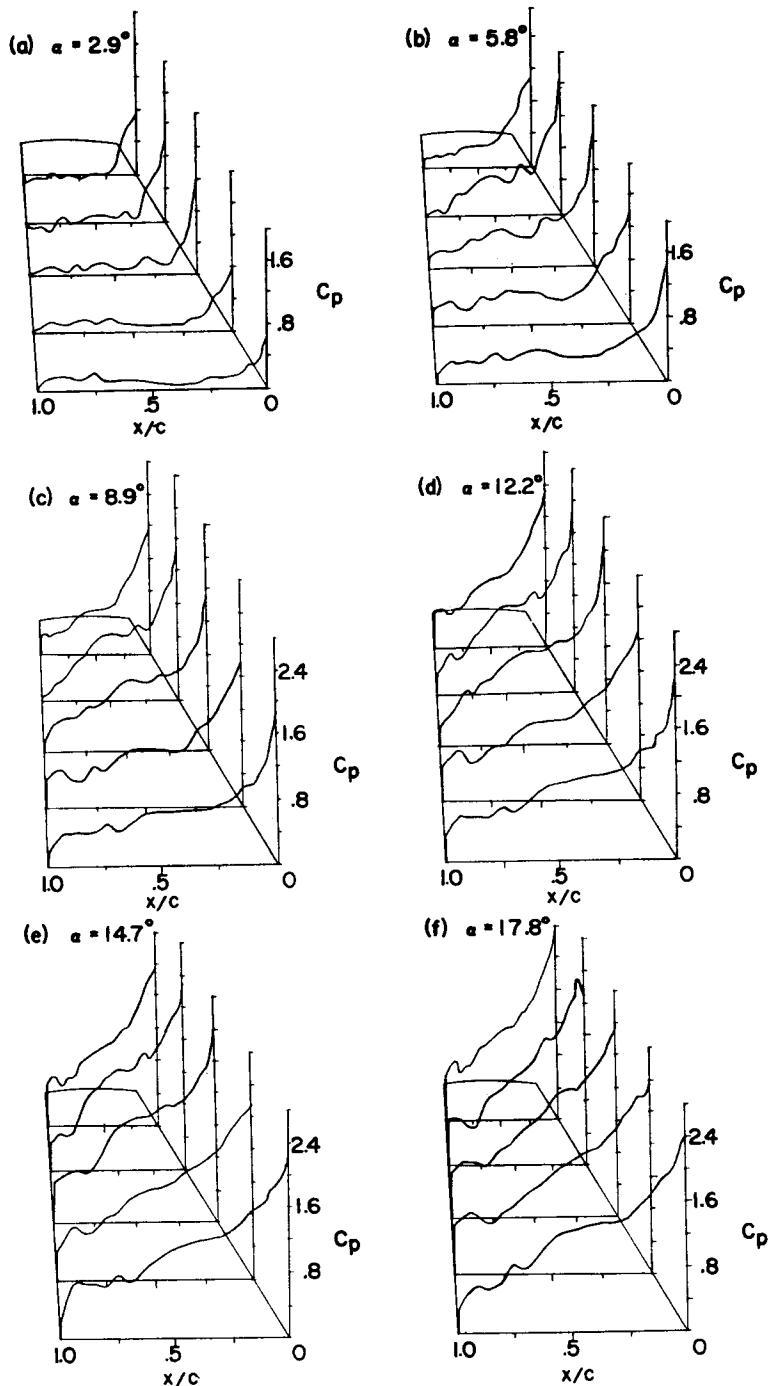


Figure 9.-- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 1.15$.

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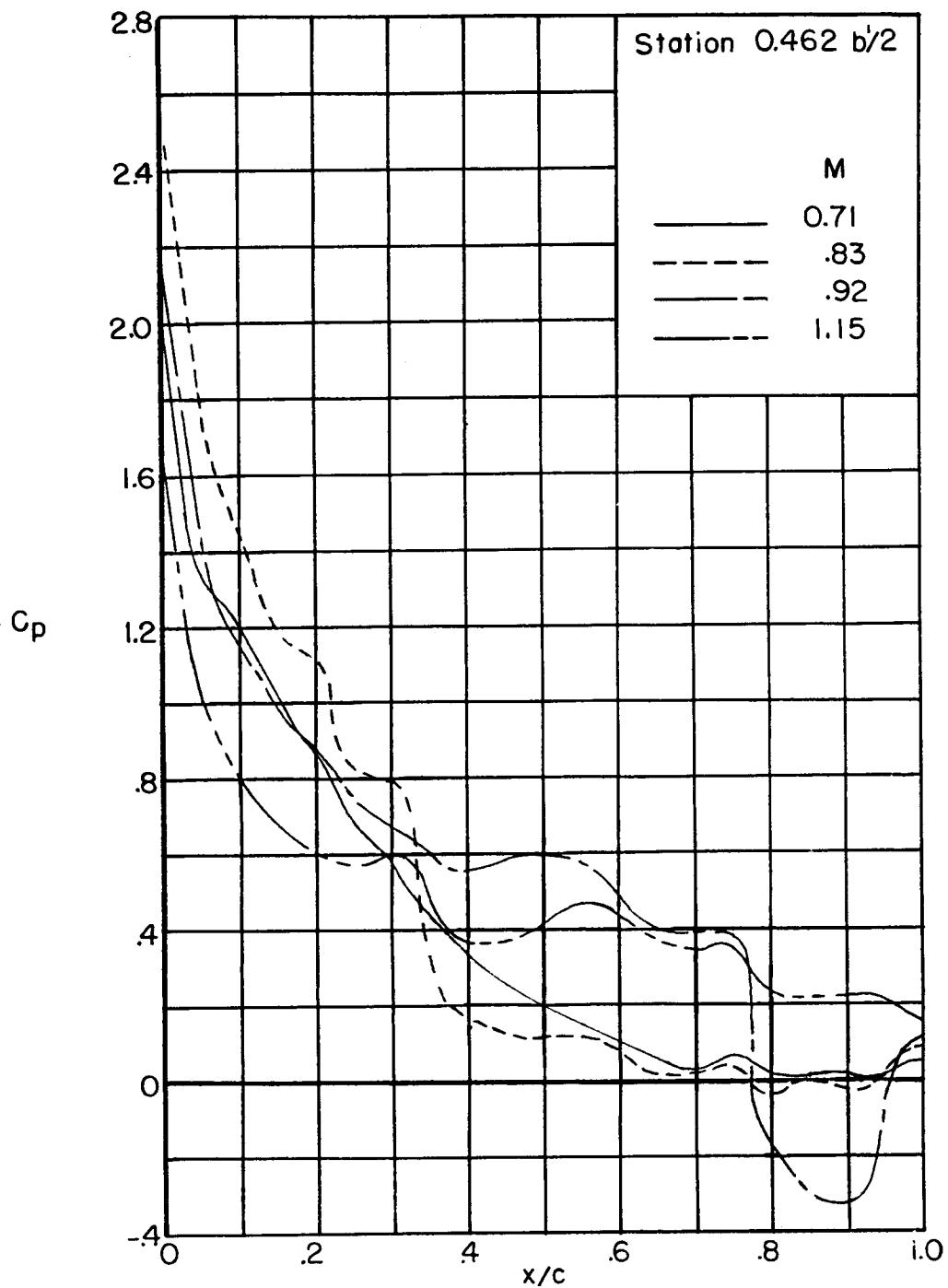


Figure 10.- Effect of Mach number on the load distribution over the midsemispan orifice station of the left wing of the X-3 airplane.
 $\alpha \approx 6^\circ$.

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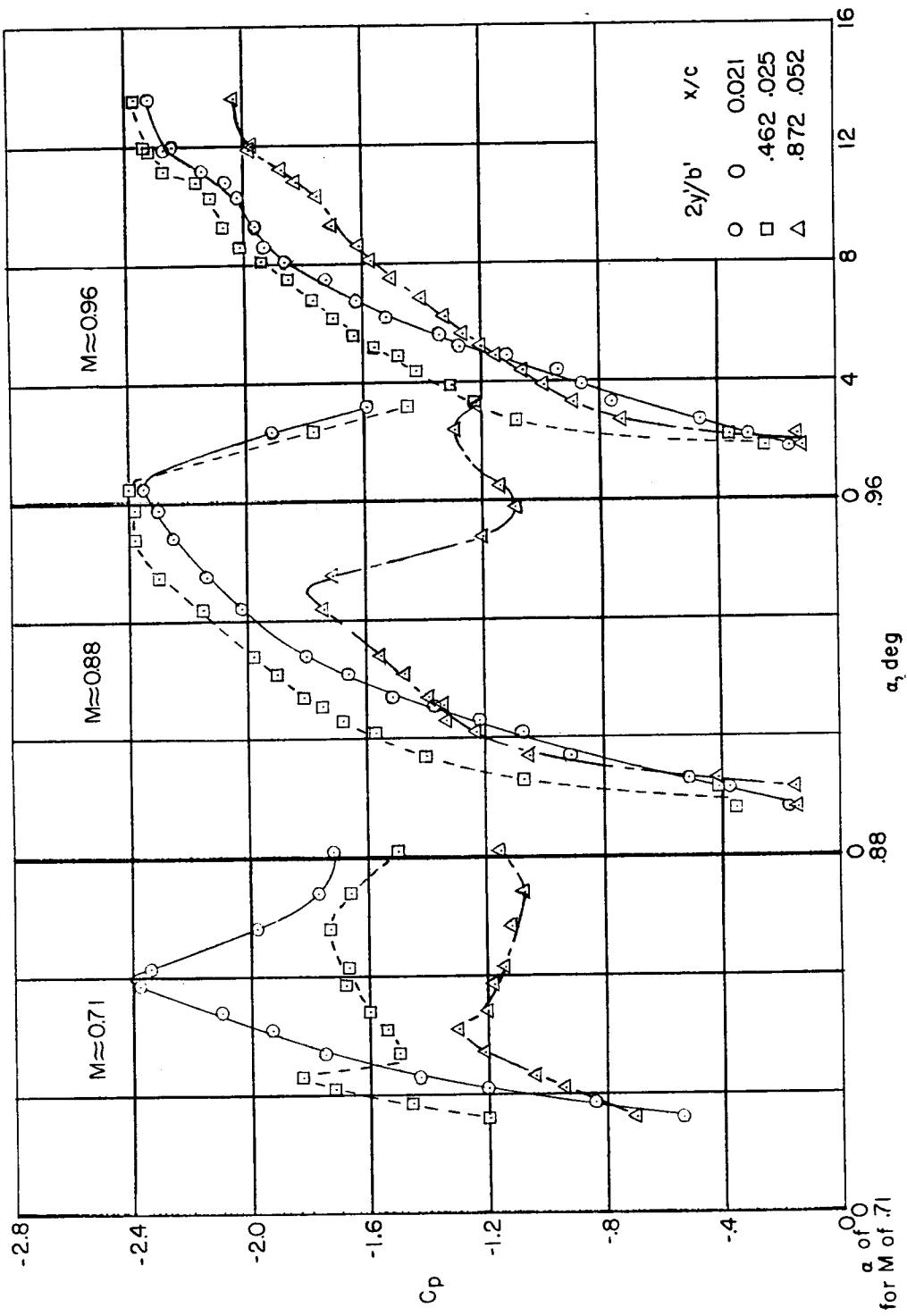


Figure 11.- Variation with angle of attack of the resultant-pressure coefficient at the leading edge of the wing of the X-3 airplane for the root, midsemispan, and tip orifice stations.

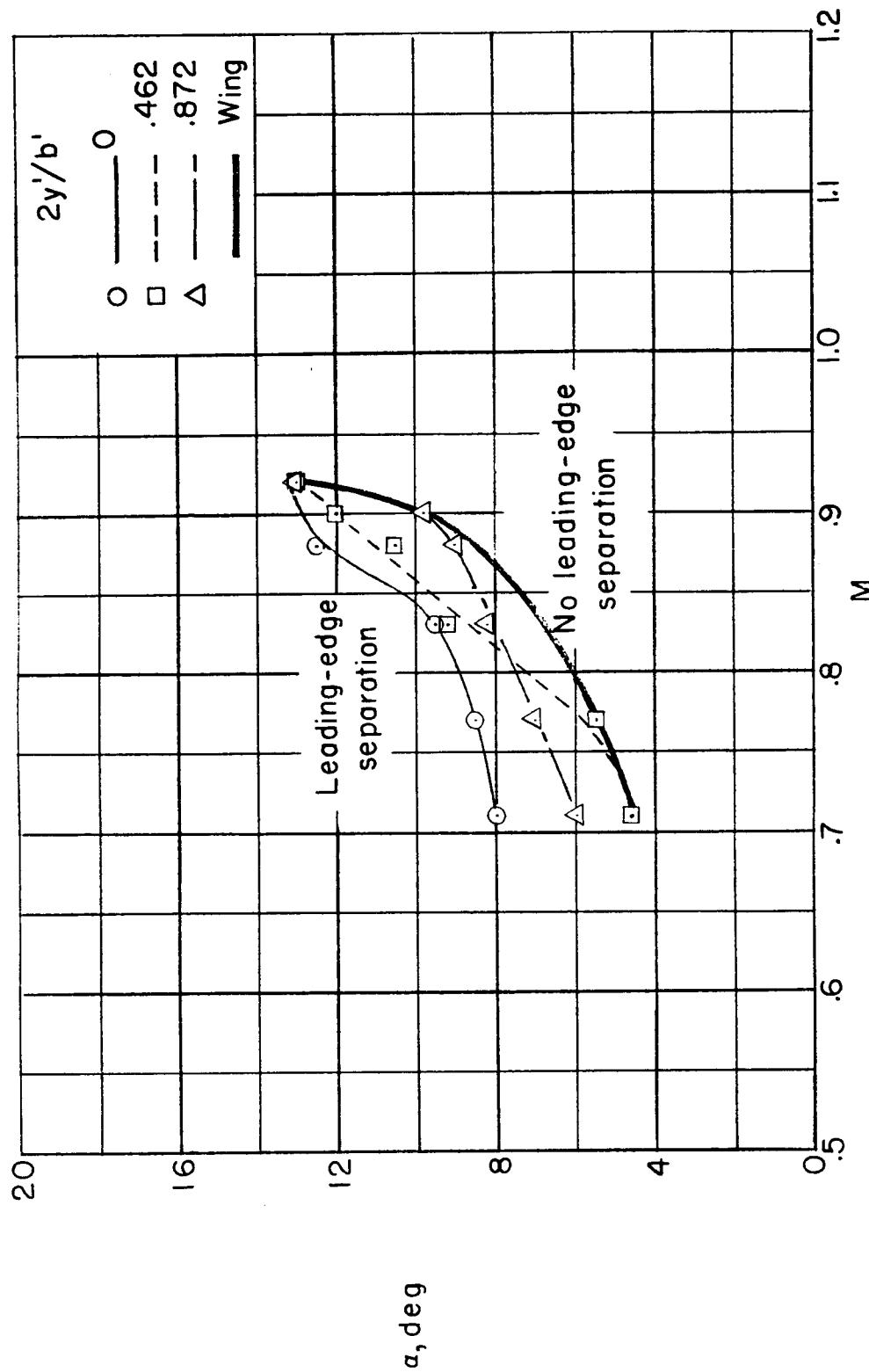


Figure 12.- Approximate boundary for leading-edge flow separation for the root, midsemispan, and tip orifice stations of the wing of the X-3 airplane.

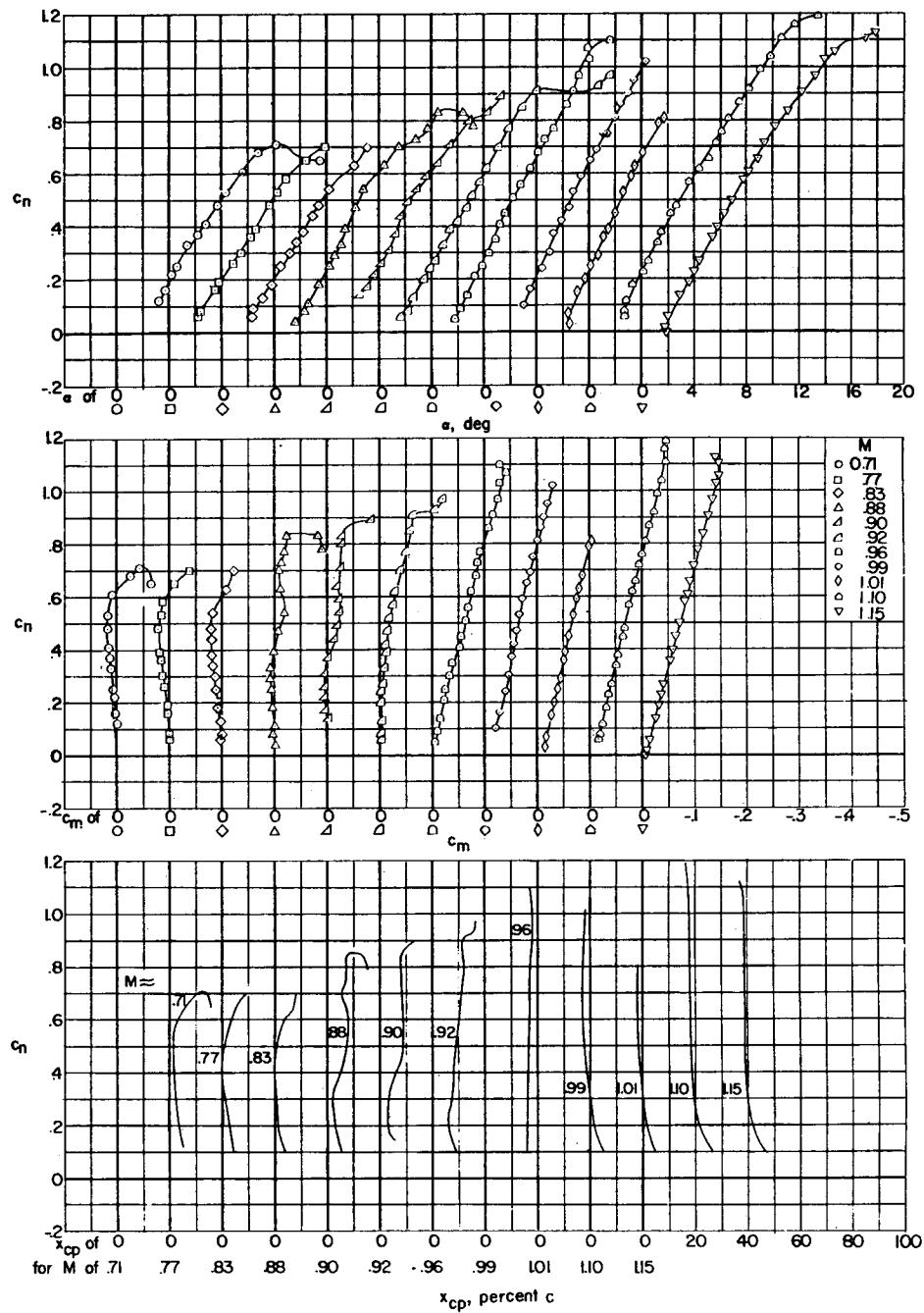
(a) Station $0b'/2$.

Figure 13.- Wing-section aerodynamic characteristics for the five orifice stations of the wing of the X-3 airplane.

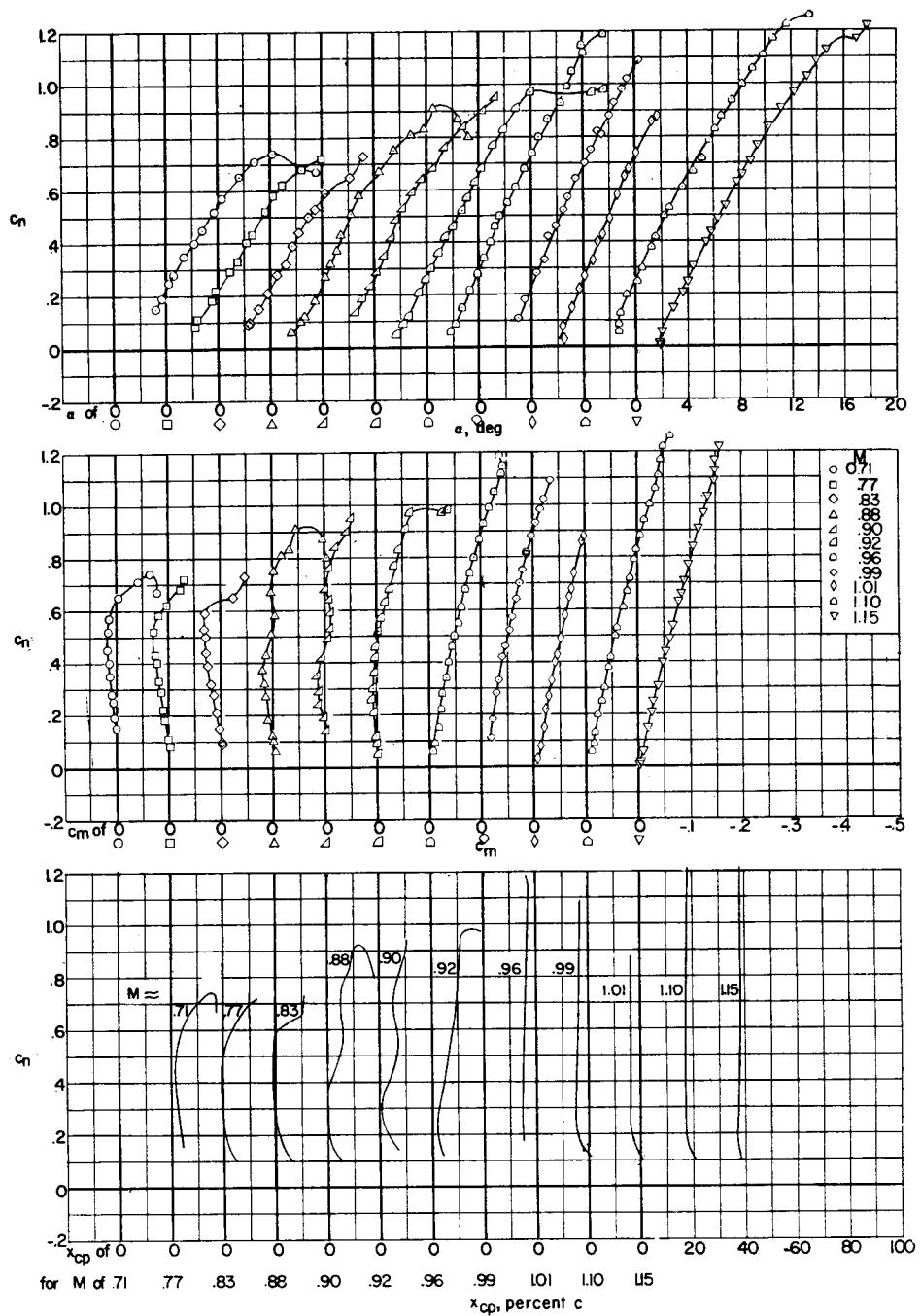
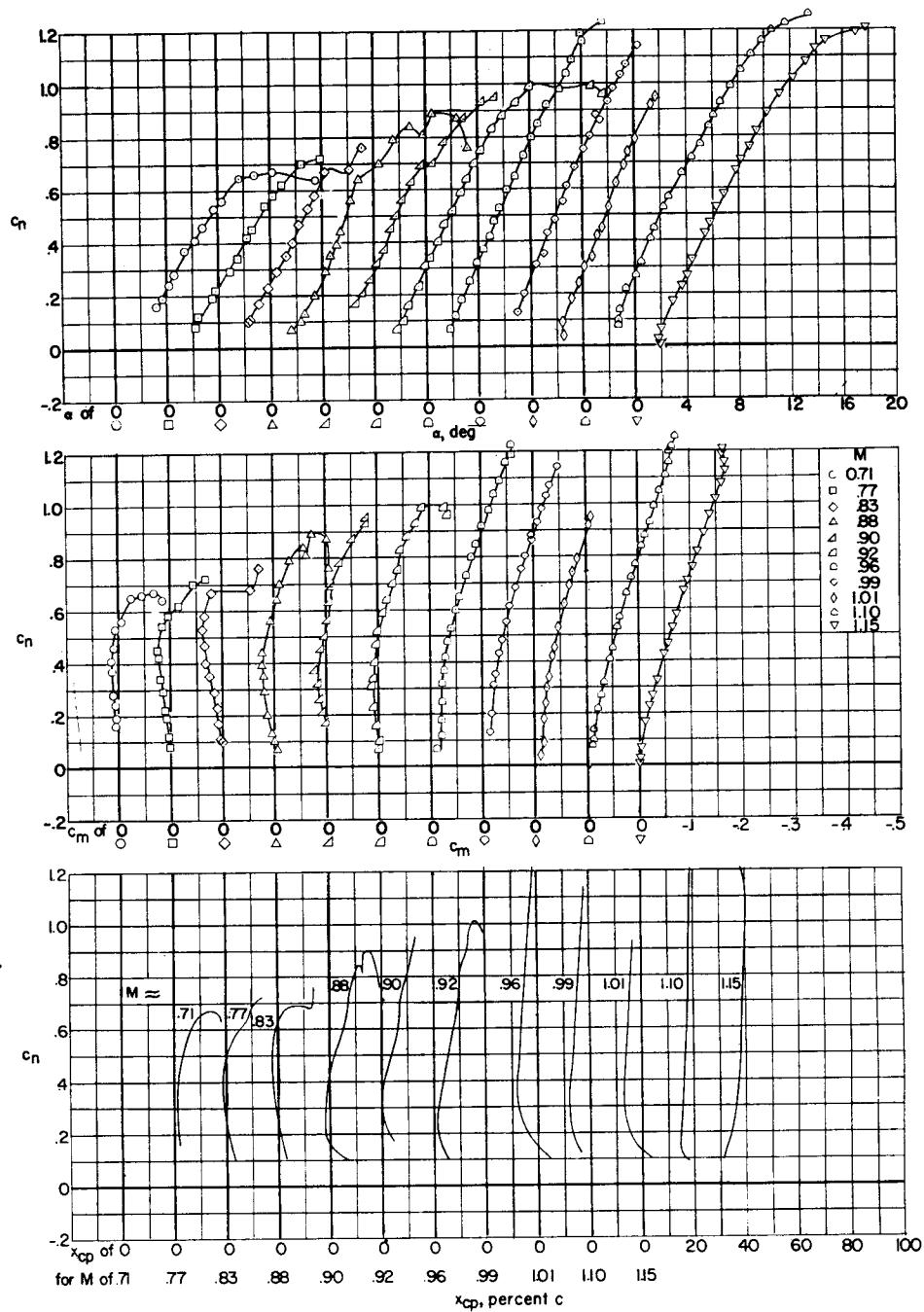
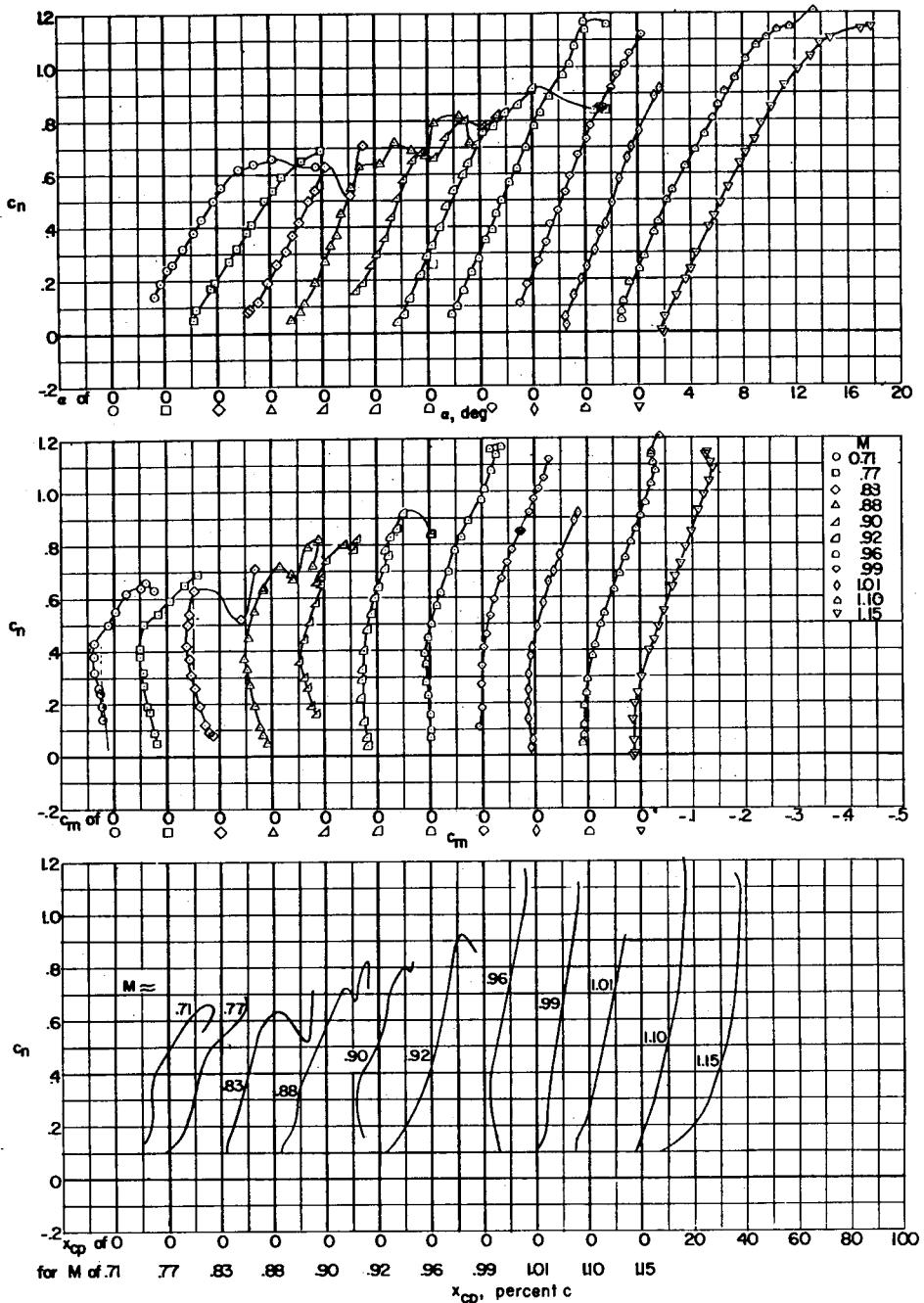
(b) Station $0.231b'/2$.

Figure 13.- Continued.



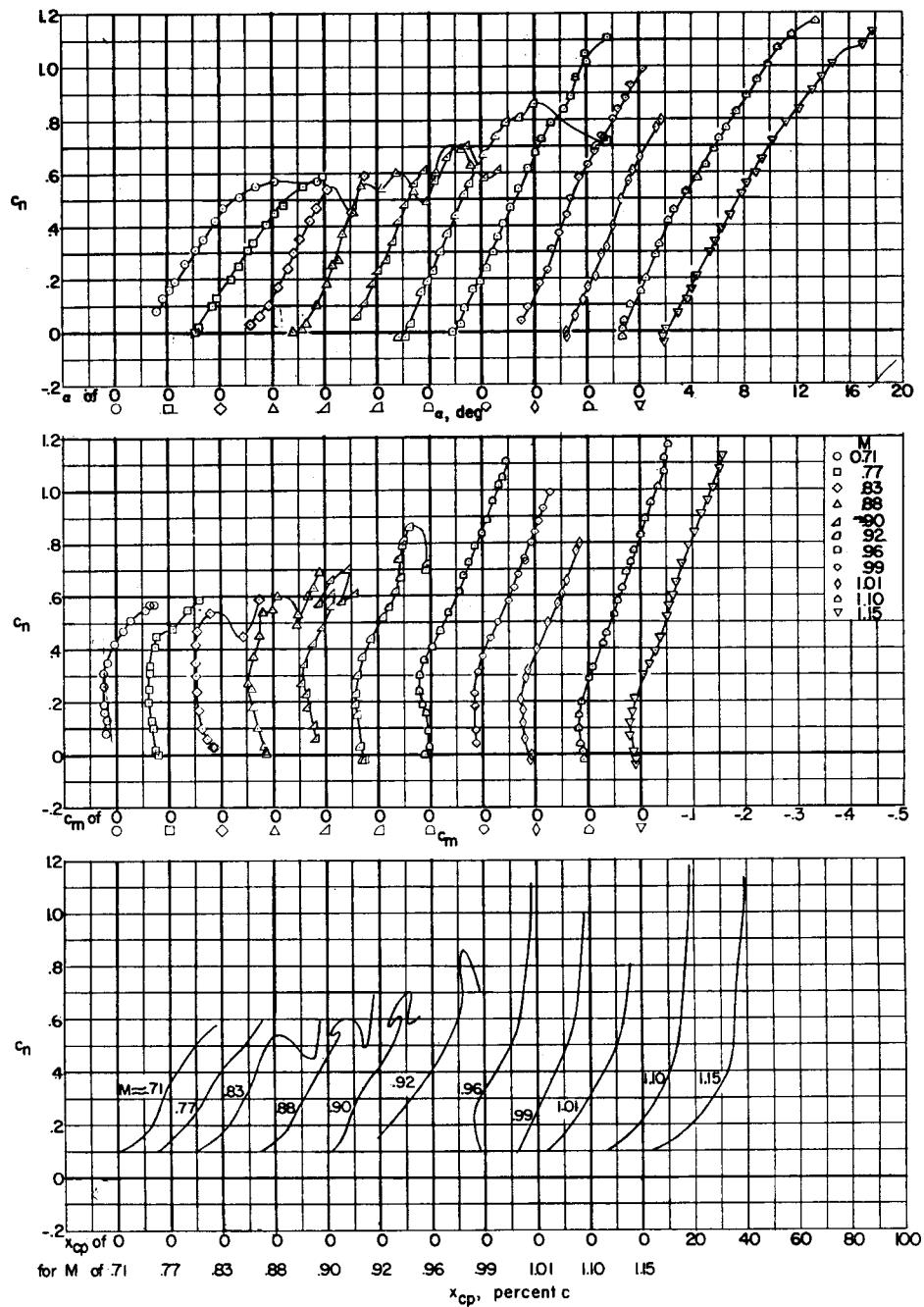
(c) Station 0.462b' / 2.

Figure 13.- Continued.



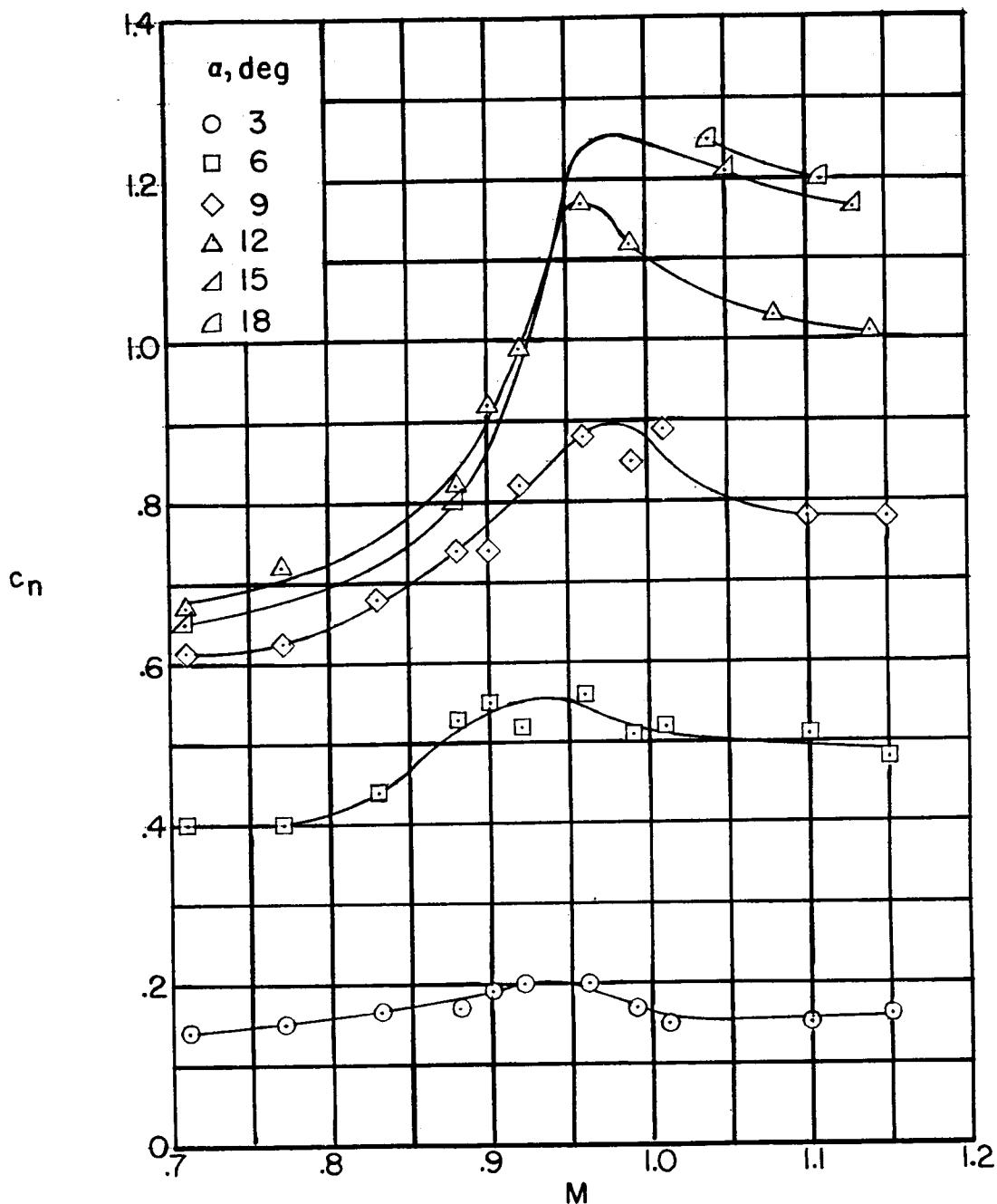
(d) Station 0.673b'/2.

Figure 13.- Continued.



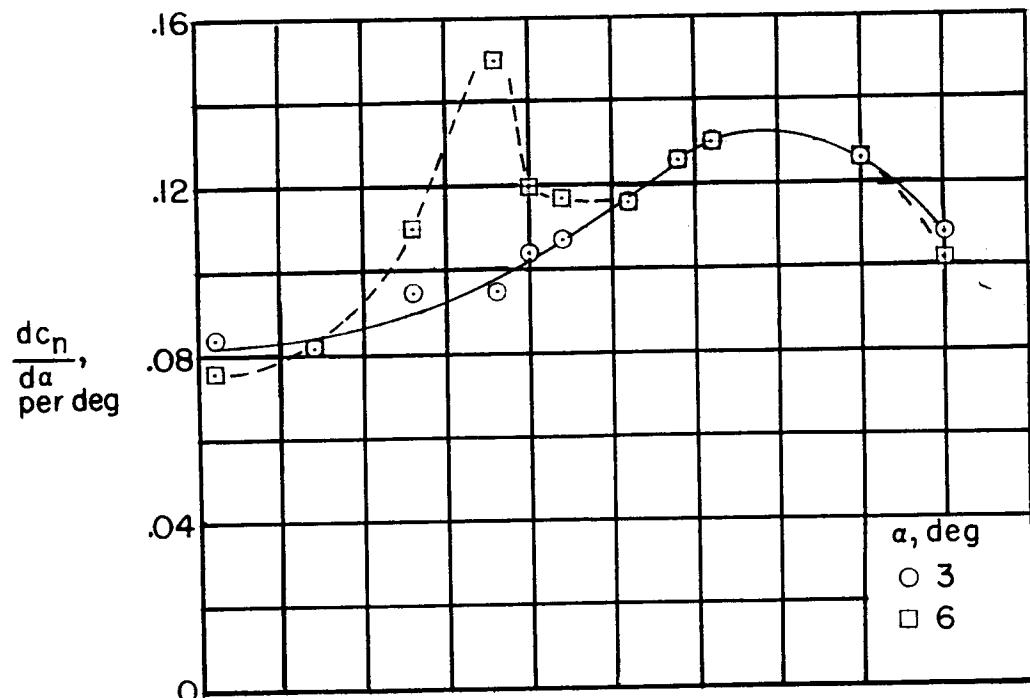
(e) Station 0.872b' /2.

Figure 13.- Concluded.

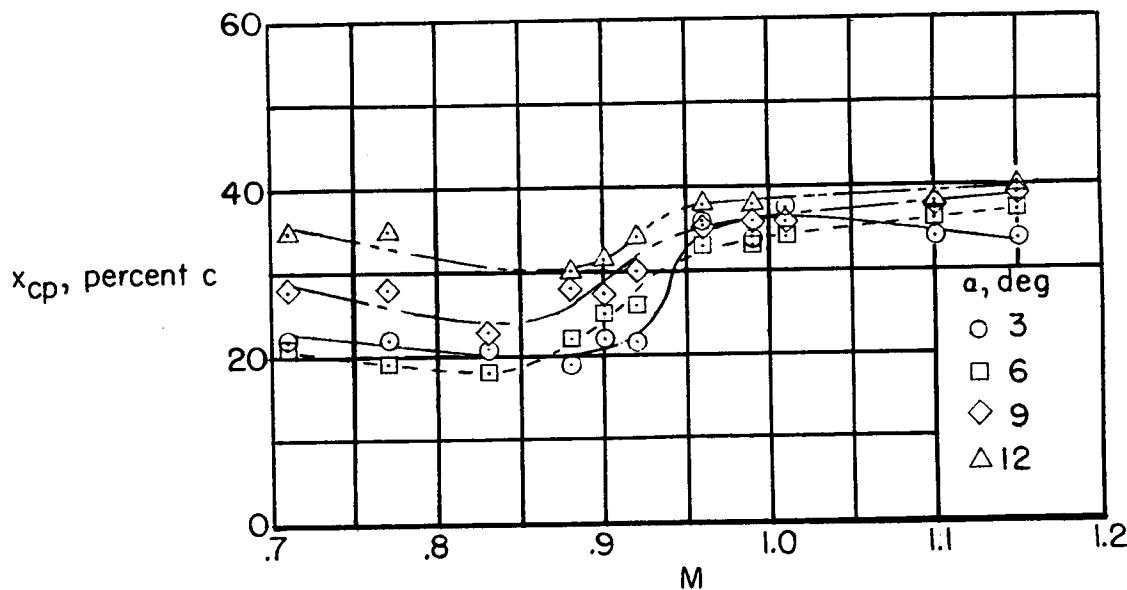


(a) Normal-force coefficient.

Figure 14.- Variation with Mach number of the aerodynamic characteristics of the midsemispan orifice station ($0.462b'/2$) of the wing of the X-3 airplane at several angles of attack.



(b) Normal-force-curve slope.



(c) Center of pressure.

Figure 14.- Concluded.

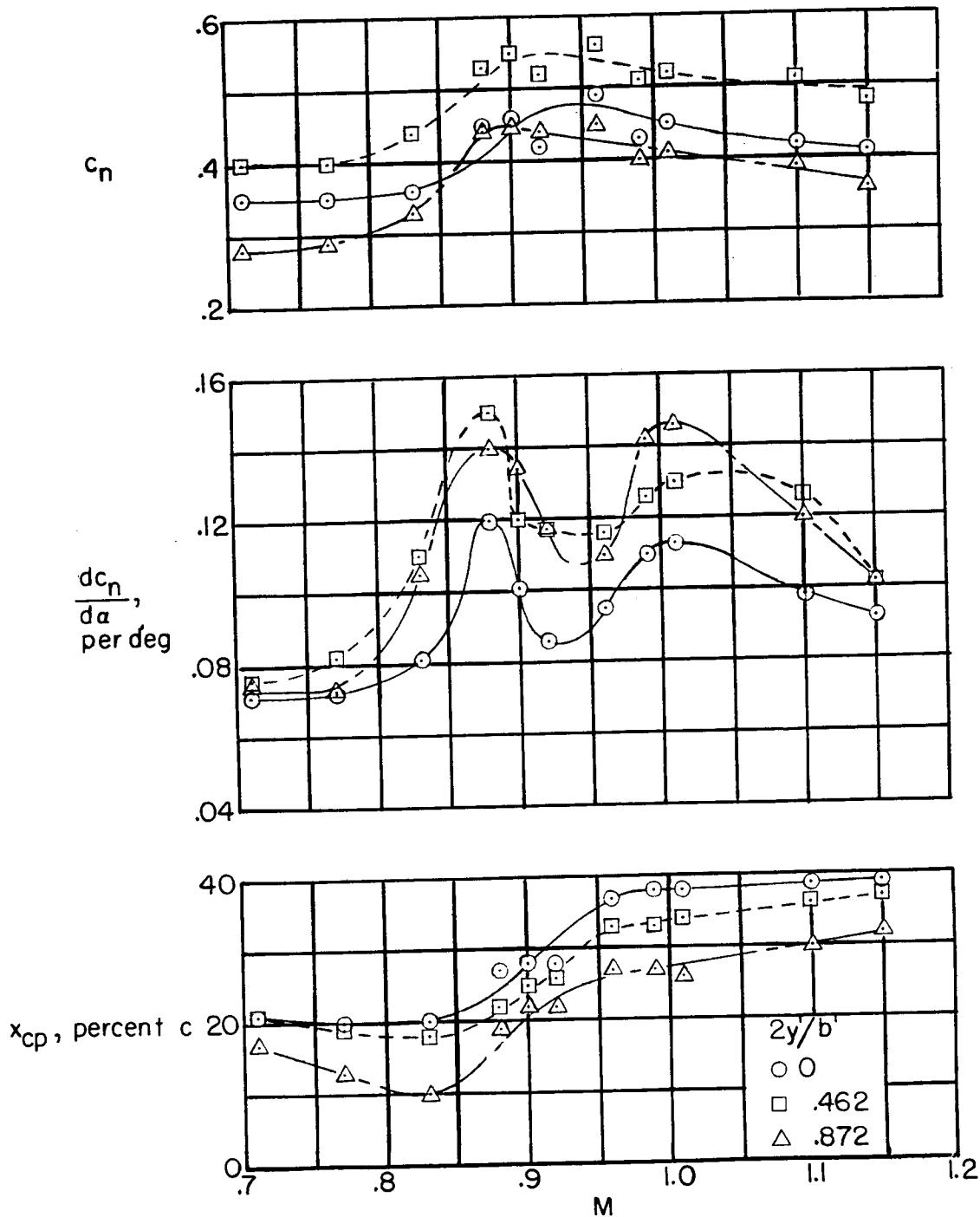


Figure 15.- Variation with Mach number of the aerodynamic characteristics of the root, midsemispan, and tip orifice stations of the wing of the X-3 airplane. $\alpha \approx 6^\circ$.

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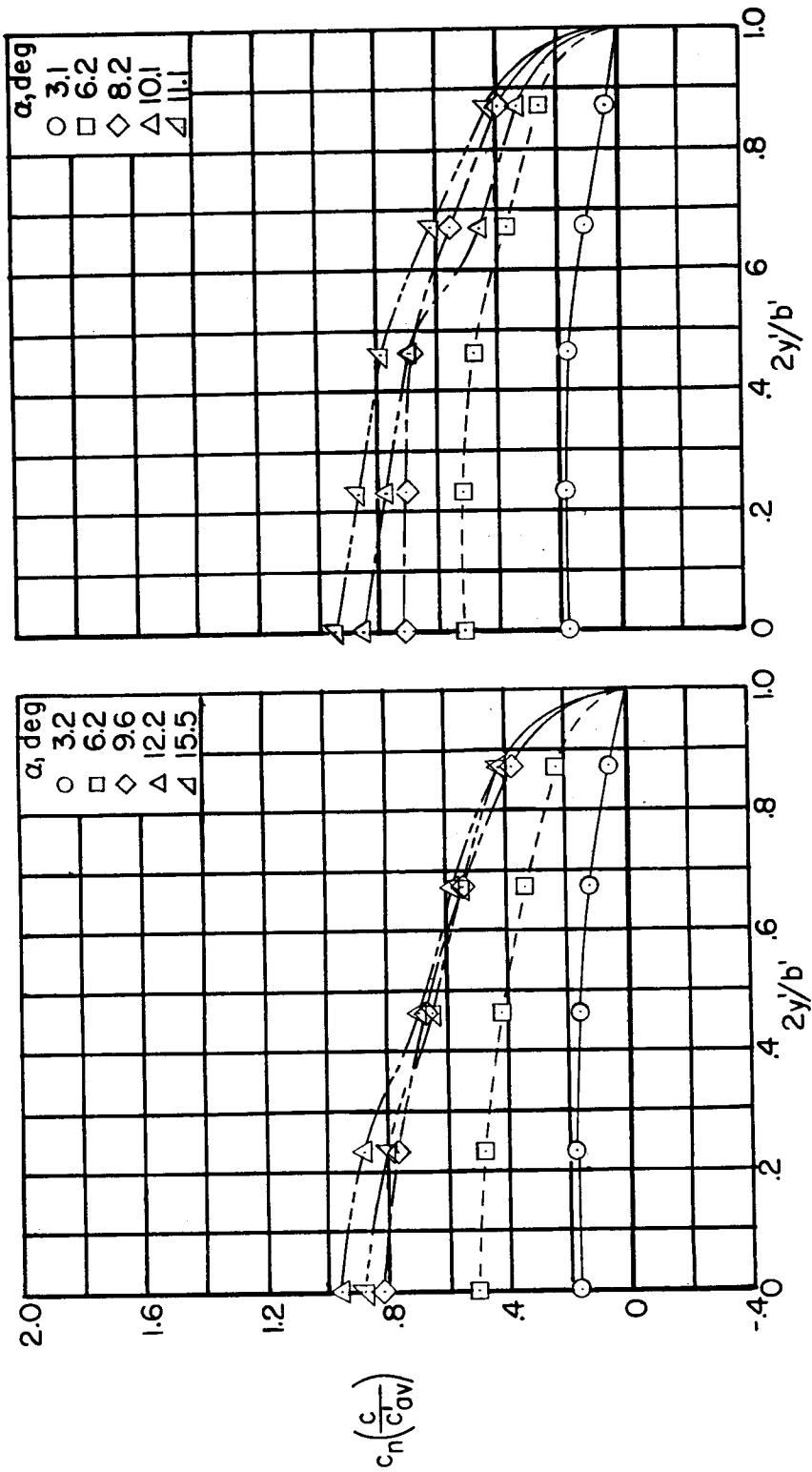


Figure 16.- Spanwise load distributions over the wing of the X-3 airplane at representative Mach numbers and angles of attack.

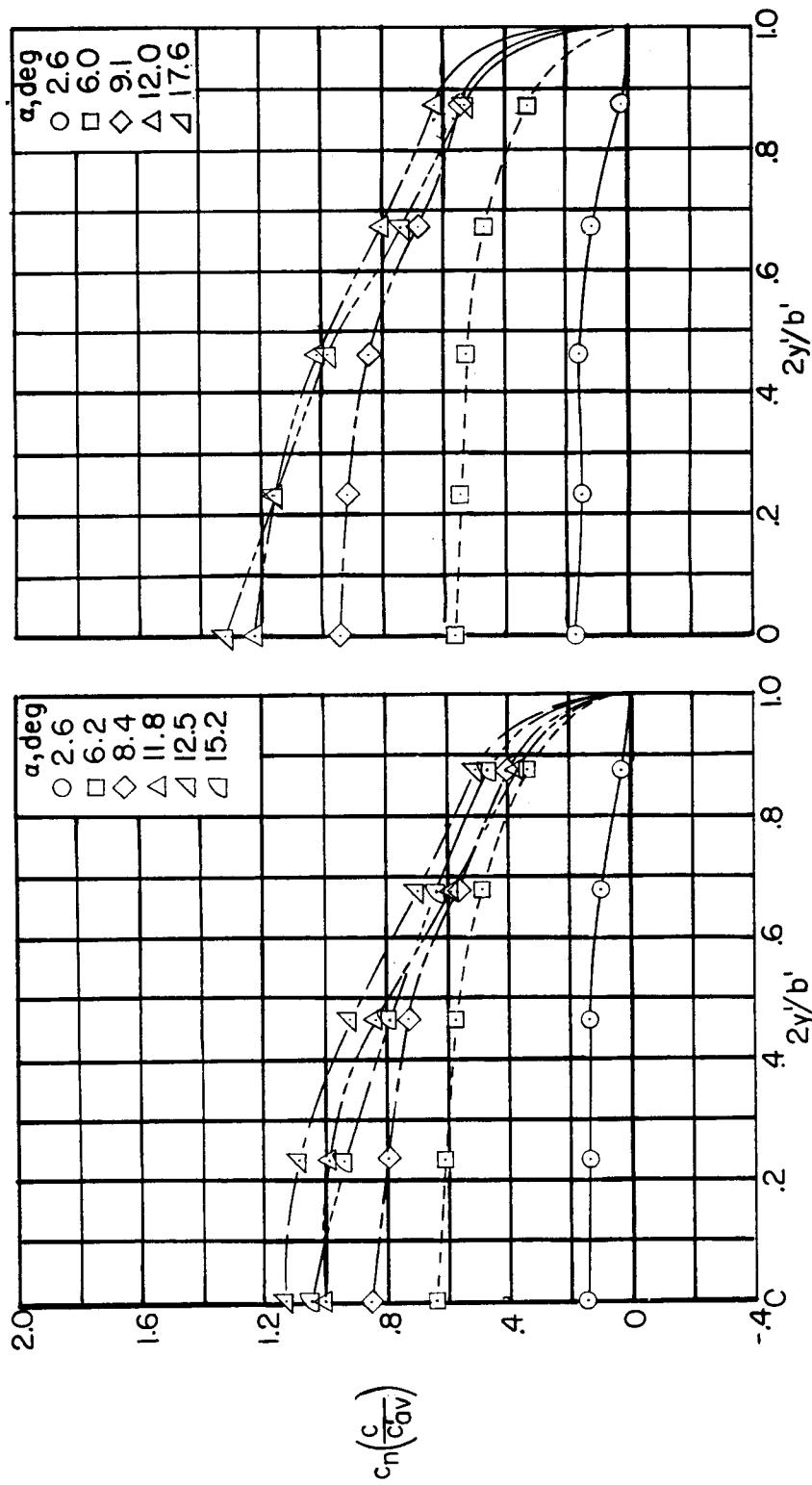


Figure 16.- Continued.

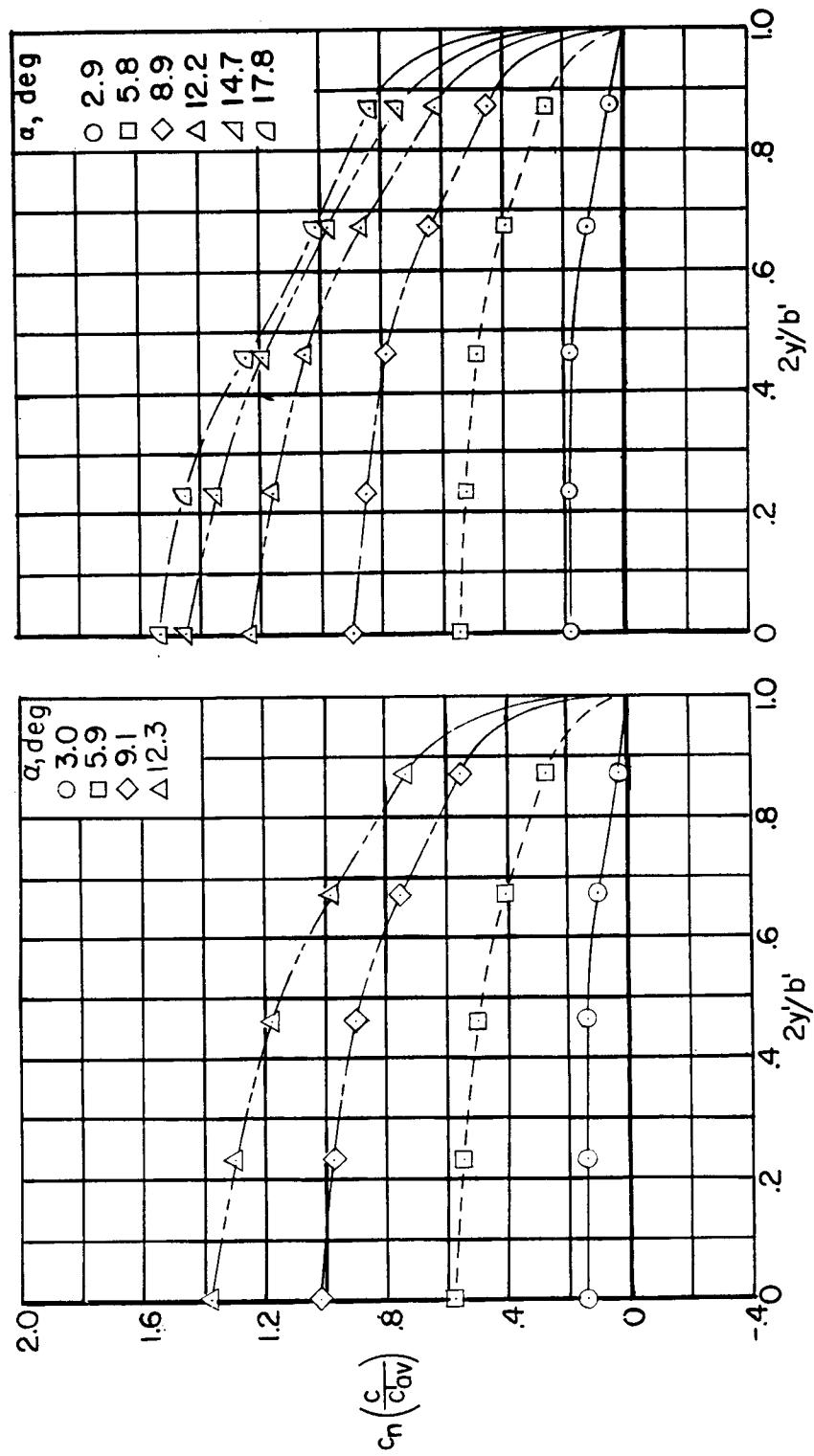
(e) $M \approx 0.99$.(f) $M \approx 1.15$.

Figure 16.- Concluded.

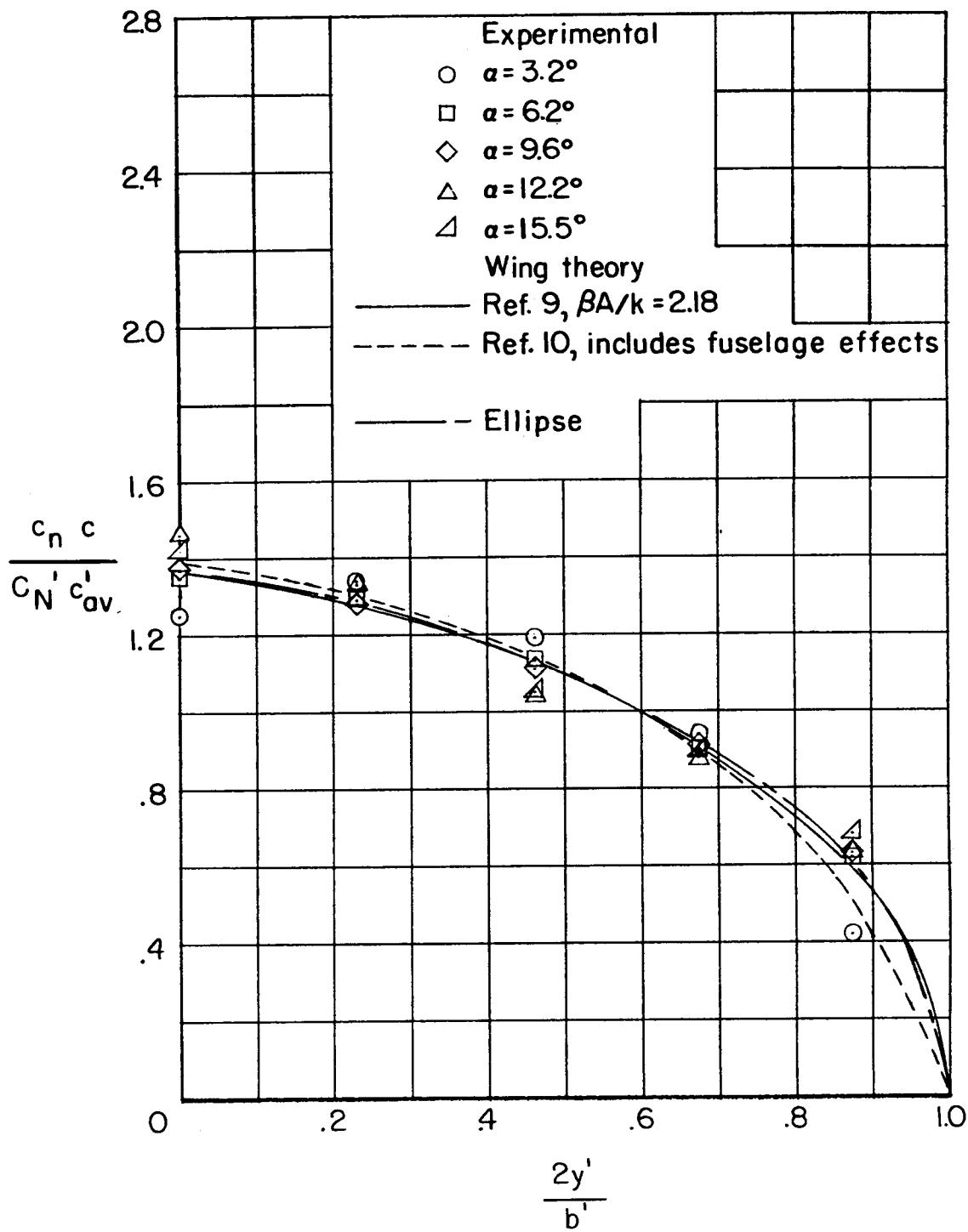


Figure 17-- Comparison of spanwise load distributions over the wing of the X-3 airplane with theory. $M \approx 0.71$.

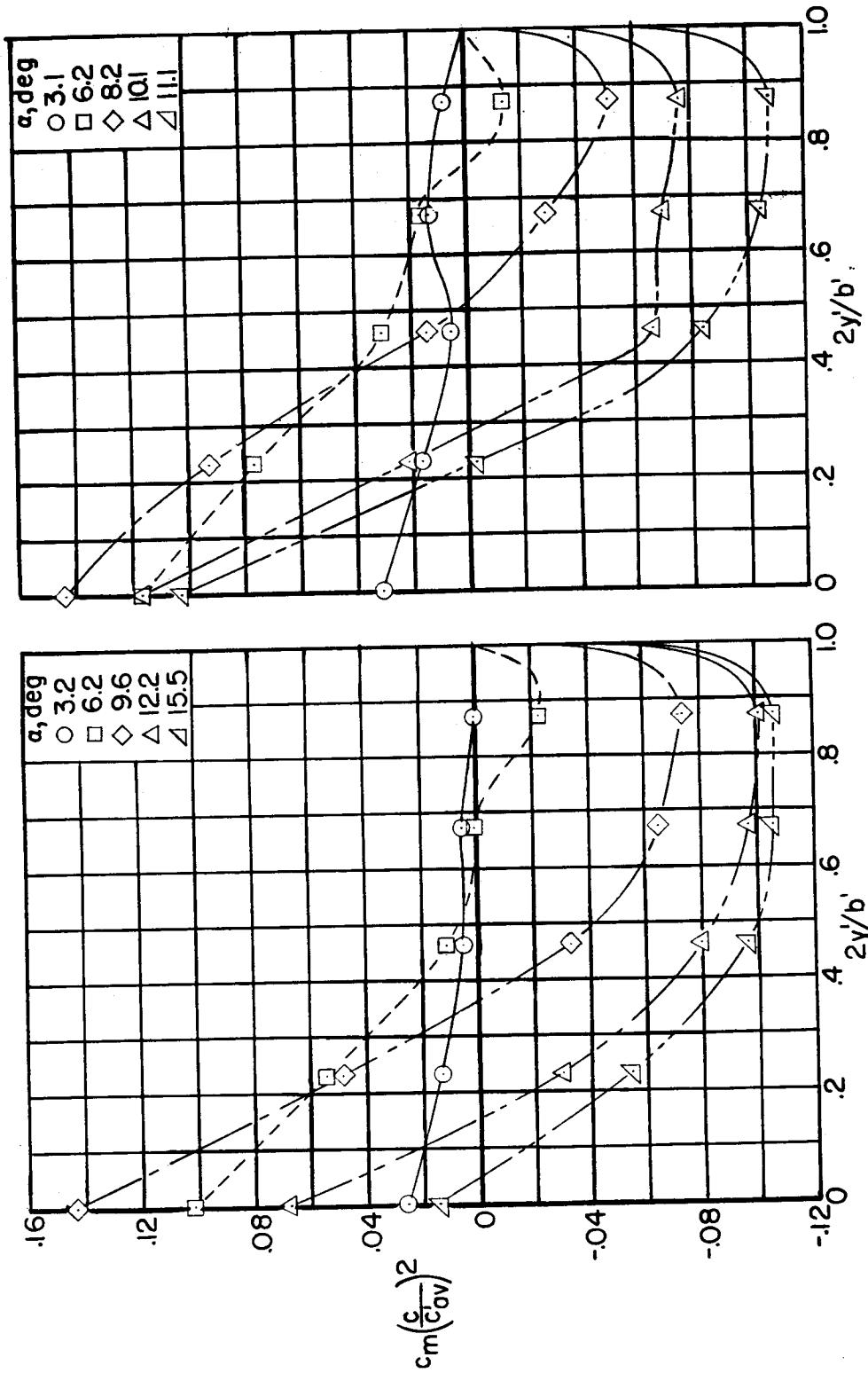


Figure 18.- Spanwise pitching-moment distributions over the wing of the X-3 airplane at representative Mach numbers and angles of attack.

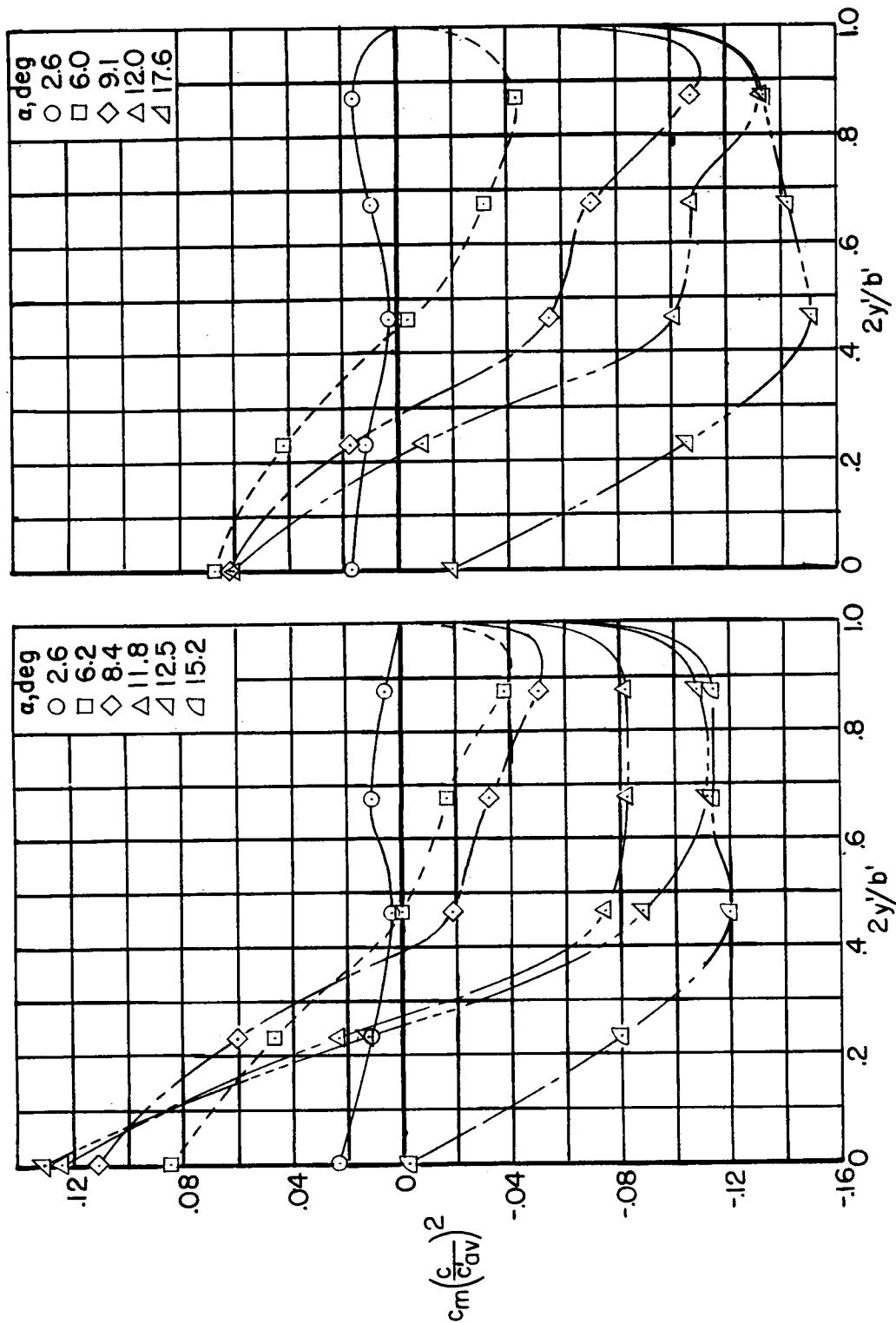


Figure 18.- Continued.

(c) $M \approx 0.88$.(d) $M \approx 0.92$.

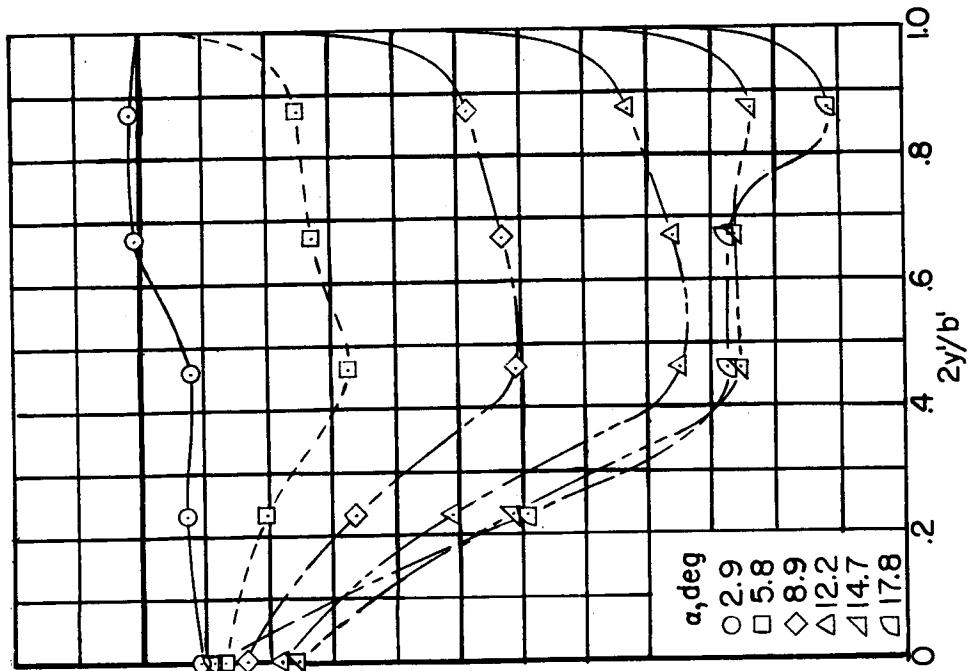
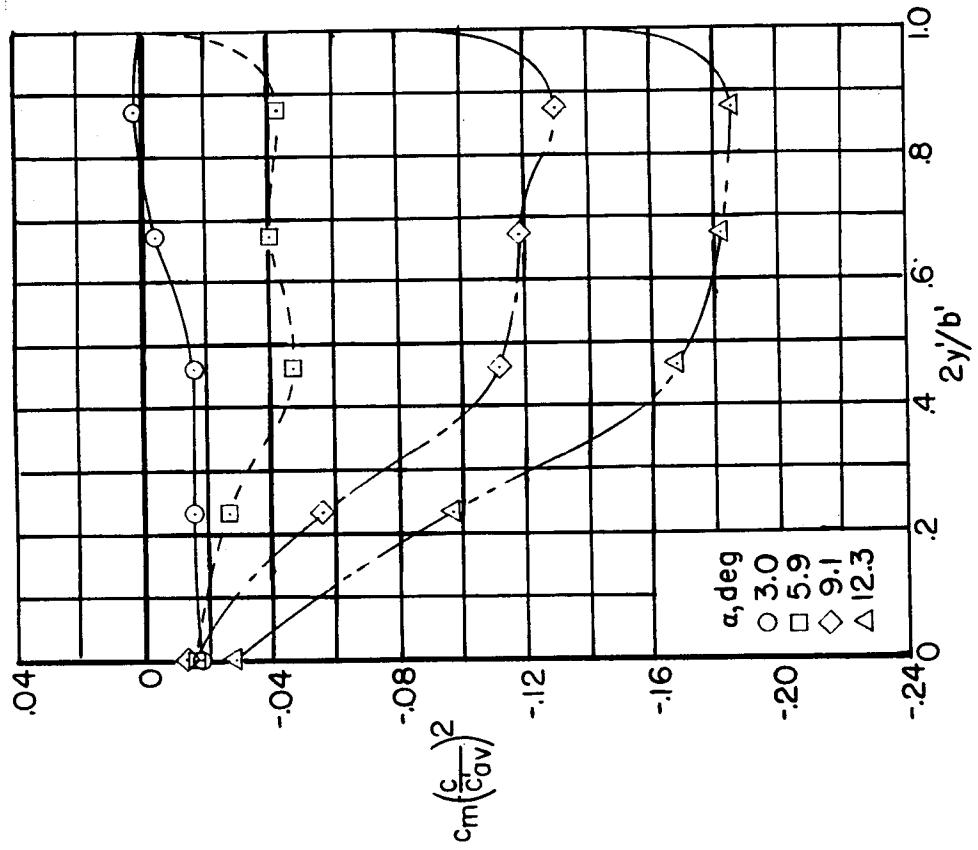
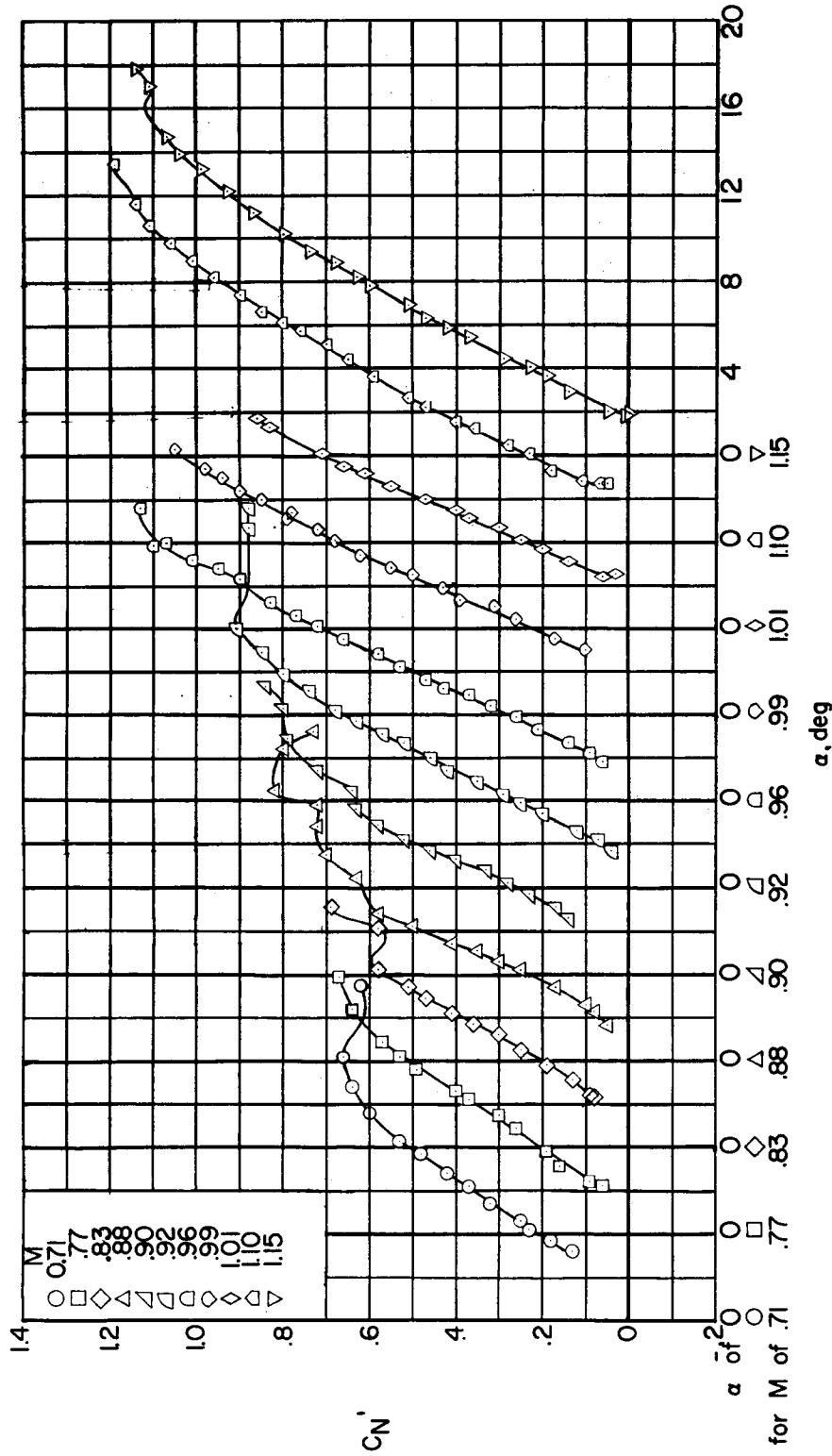
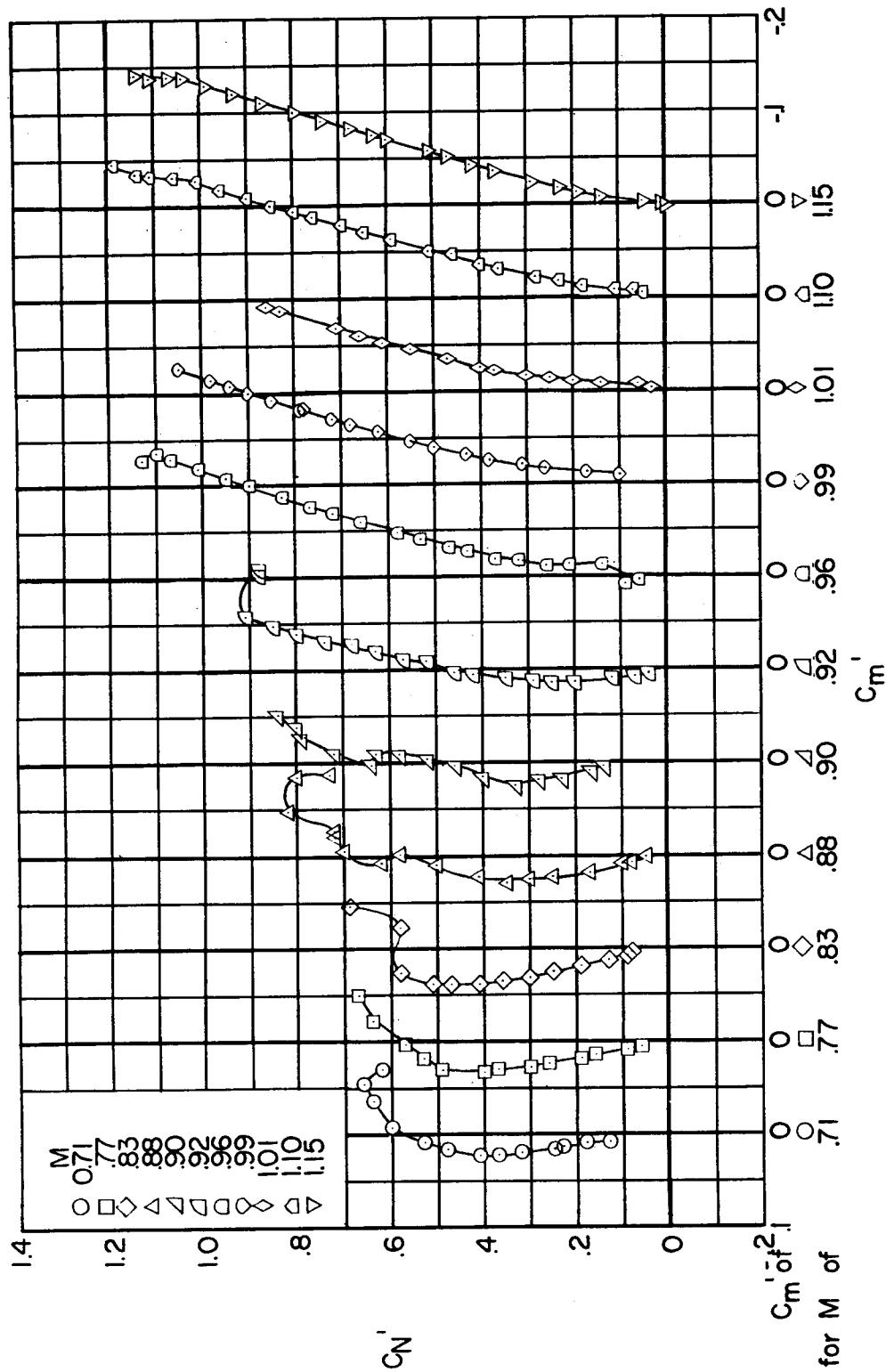
(f) $M \approx 1.15$.(e) $M \approx 0.99$.

Figure 18.- Concluded.



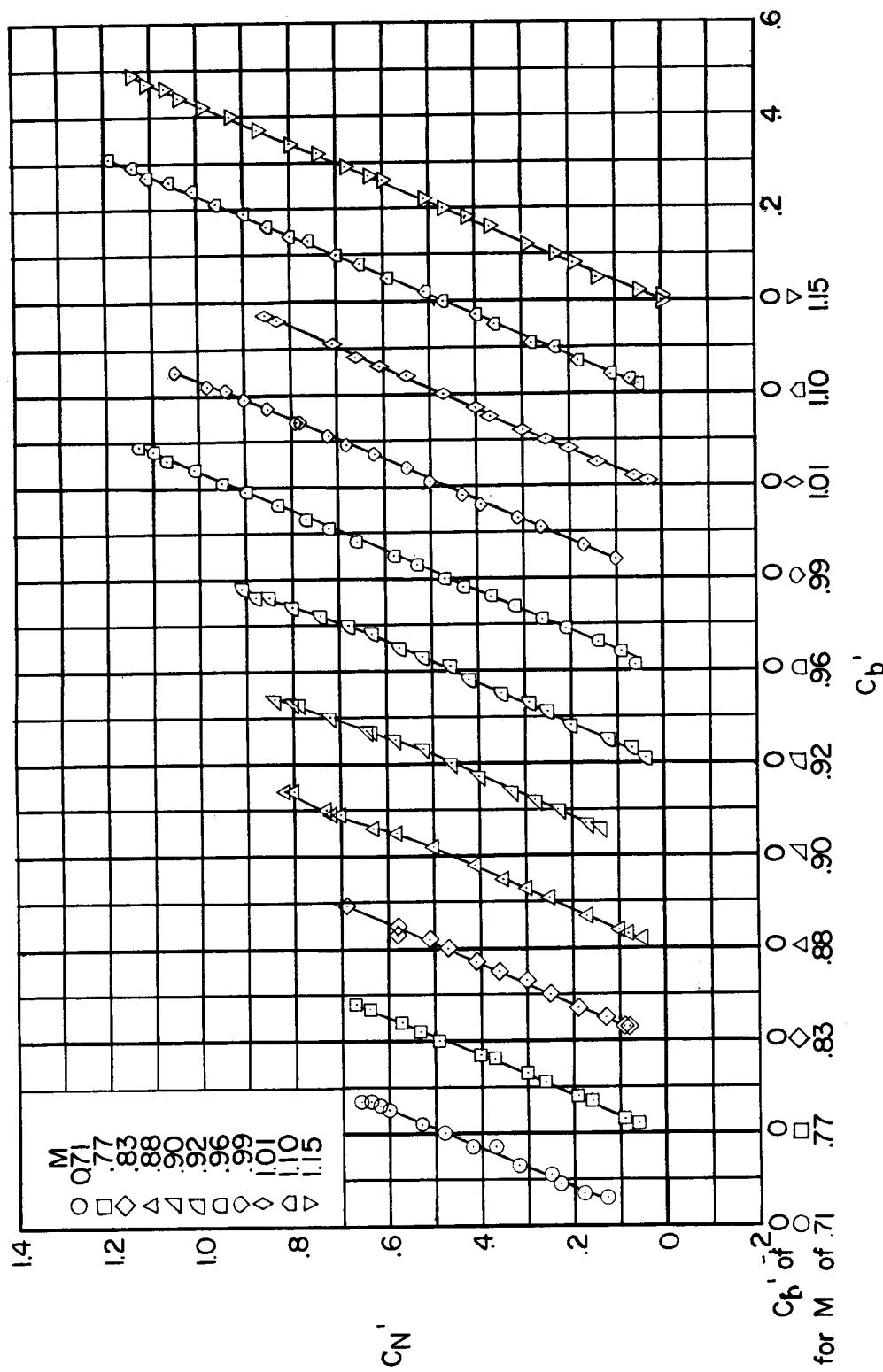
(a) Normal-force coefficient.

Figure 19.- Wing-panel aerodynamic characteristics for the X-3 airplane.



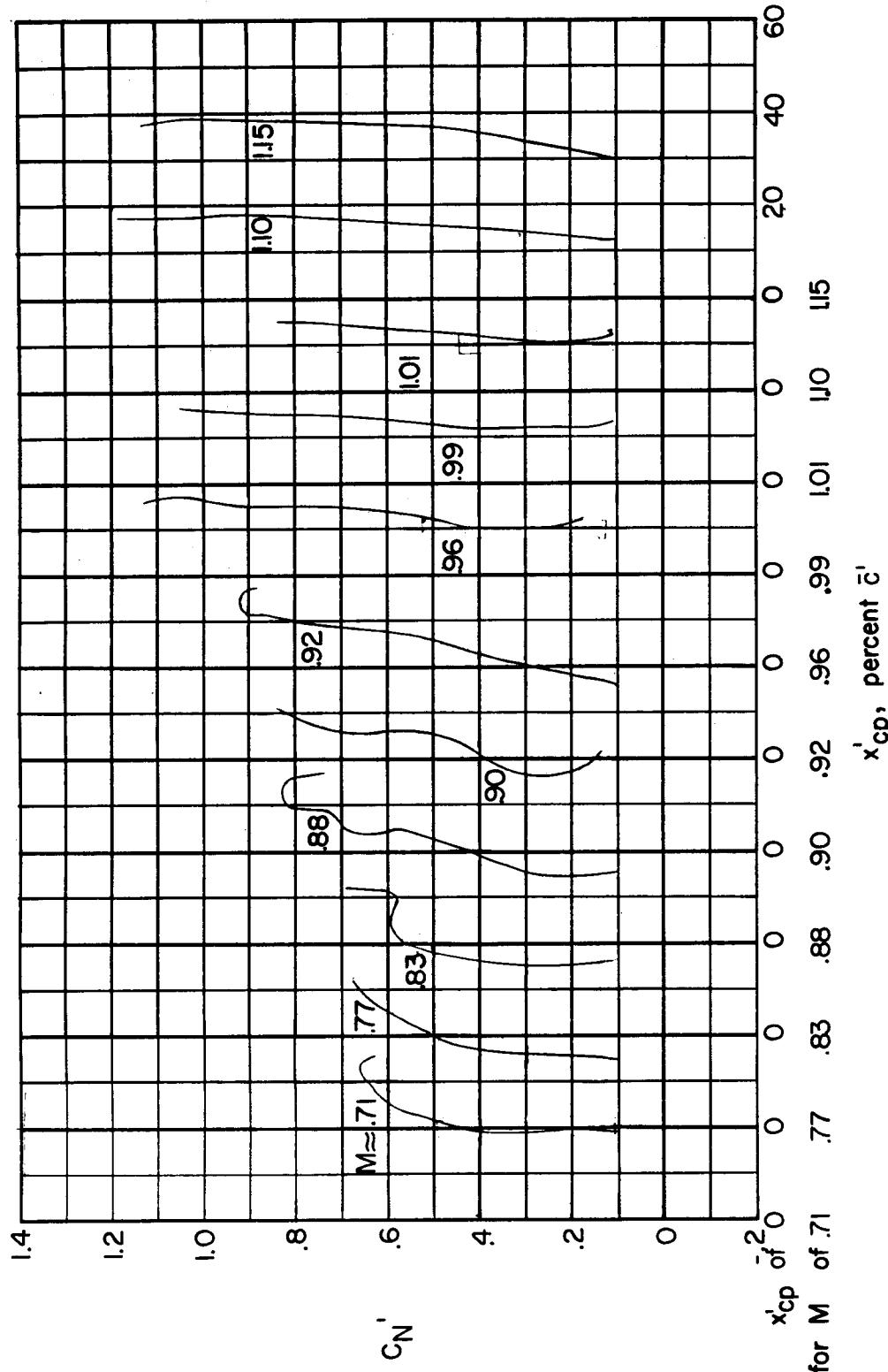
(b) Pitching-moment coefficient.

Figure 19.- Continued.



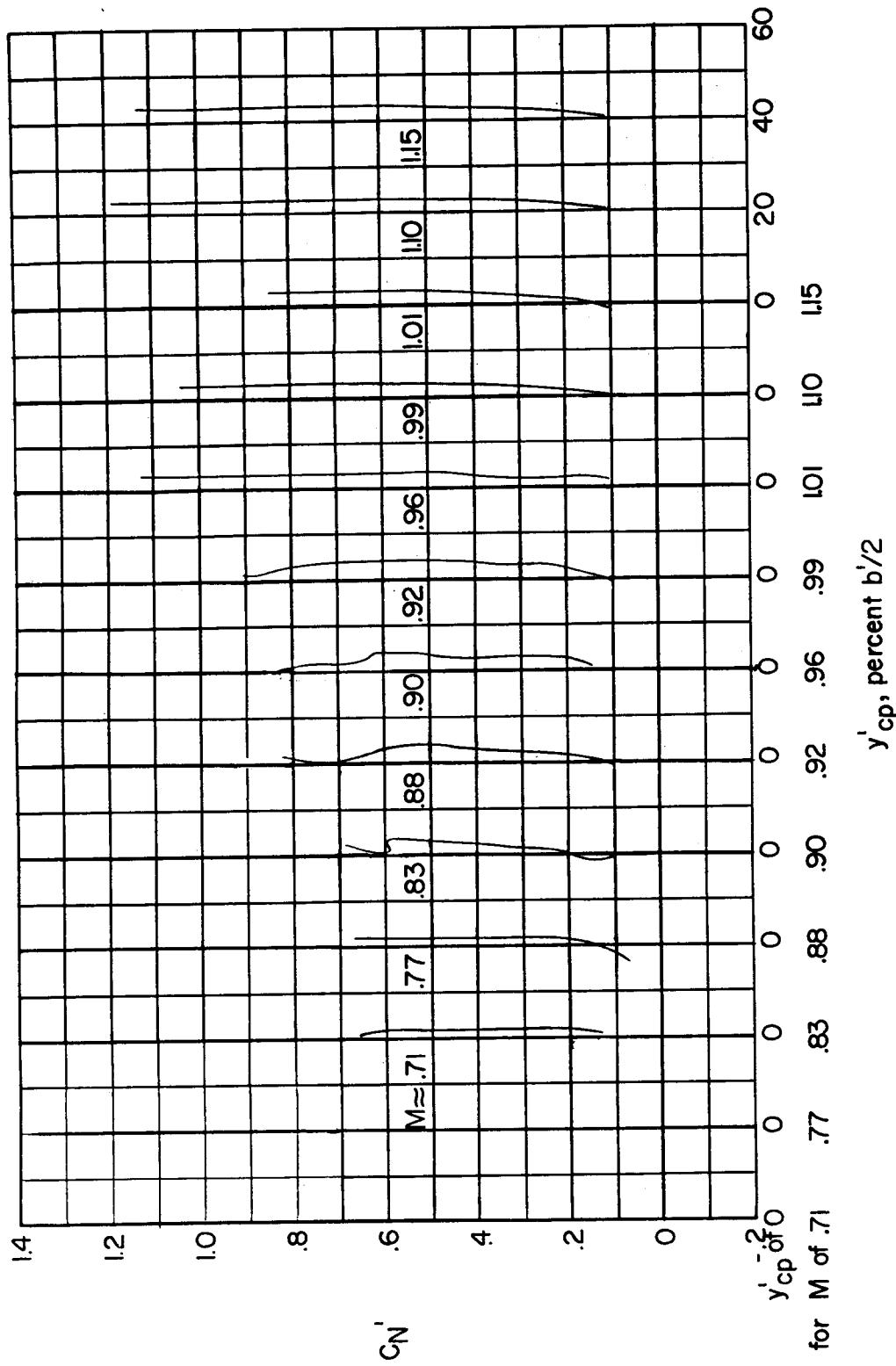
(c) Bending-moment coefficient.

Figure 19.- Continued.



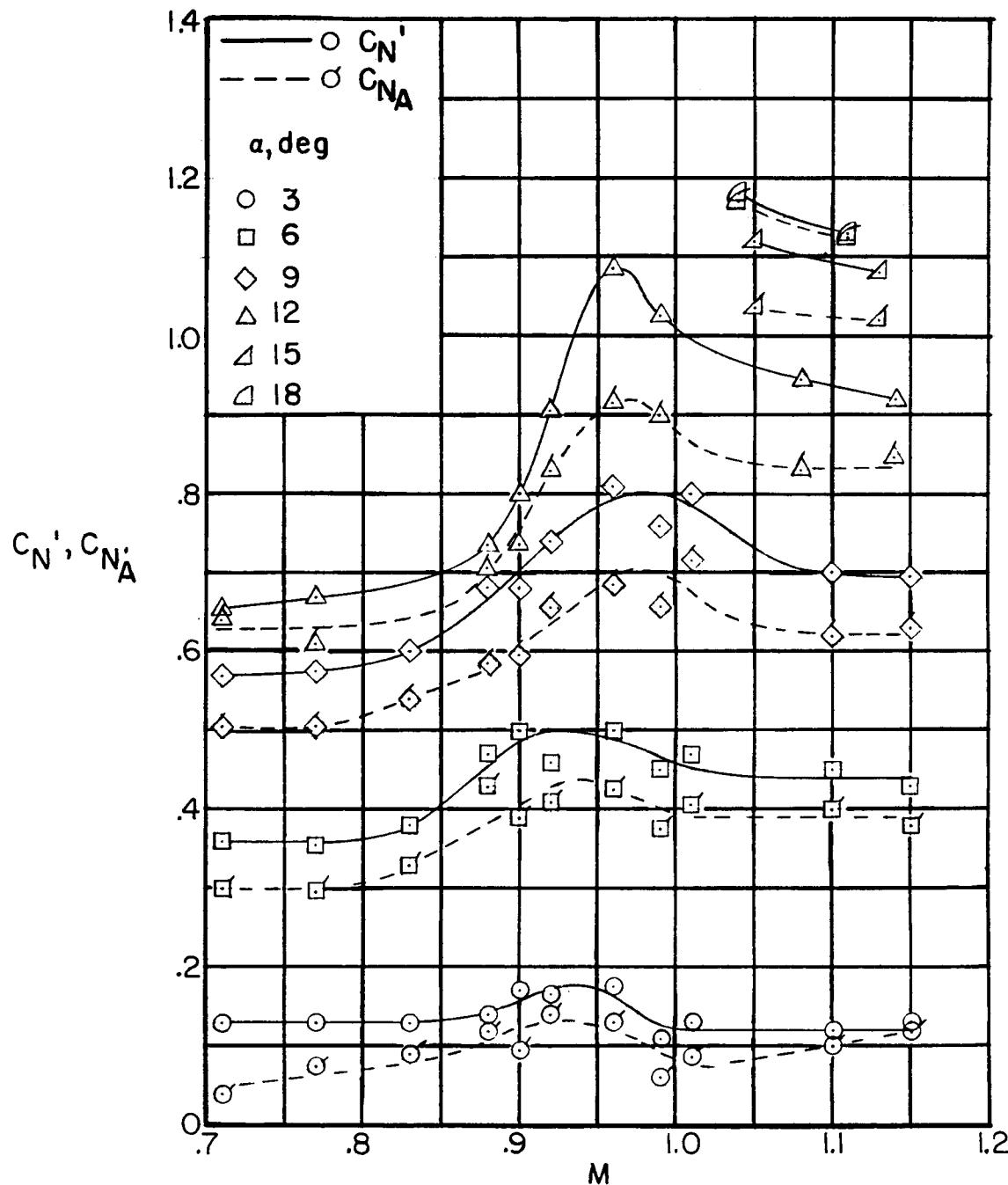
(d) Chordwise location of center of pressure.

Figure 19.- Continued.



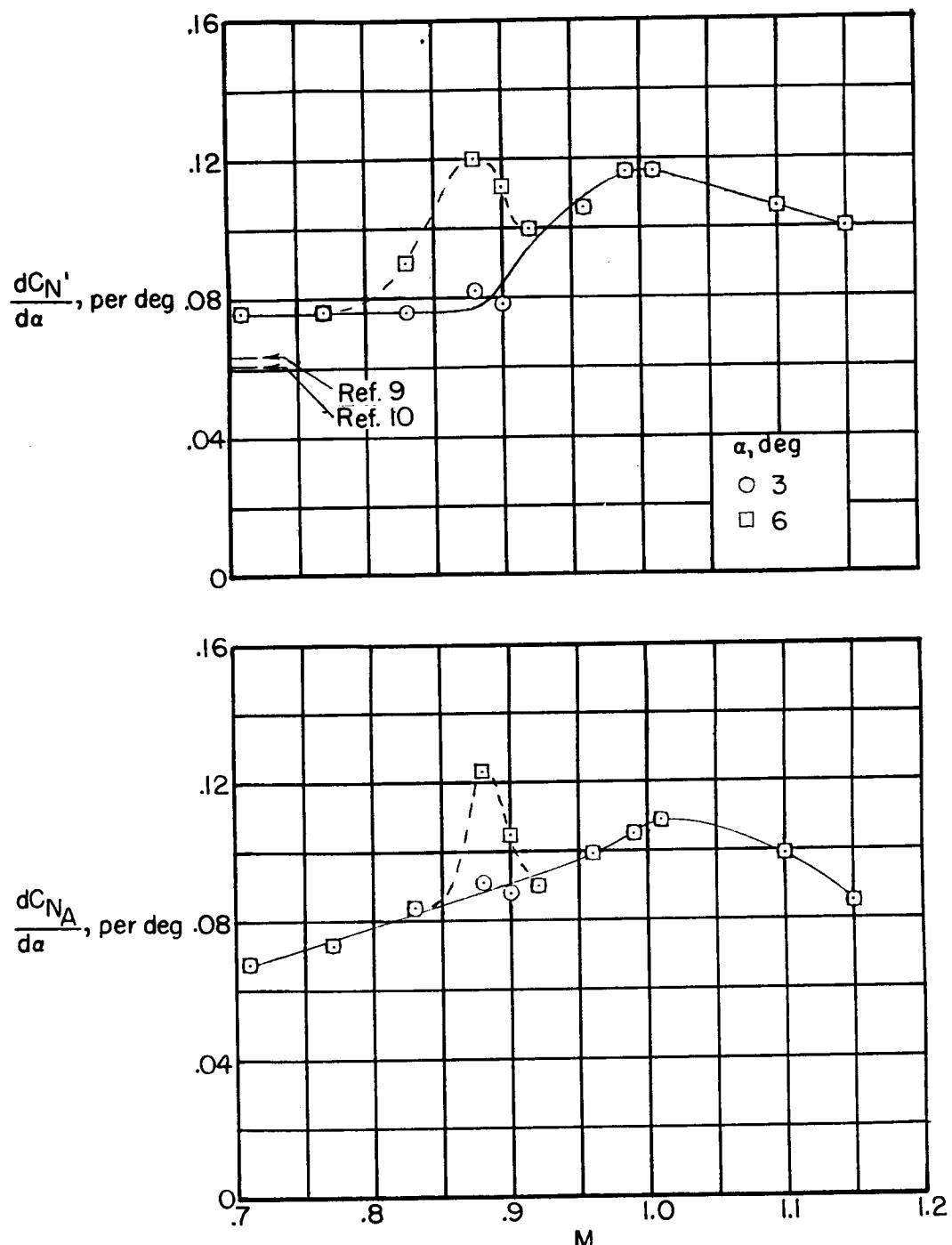
(e) Spanwise location of center of pressure.

Figure 19.- Concluded.



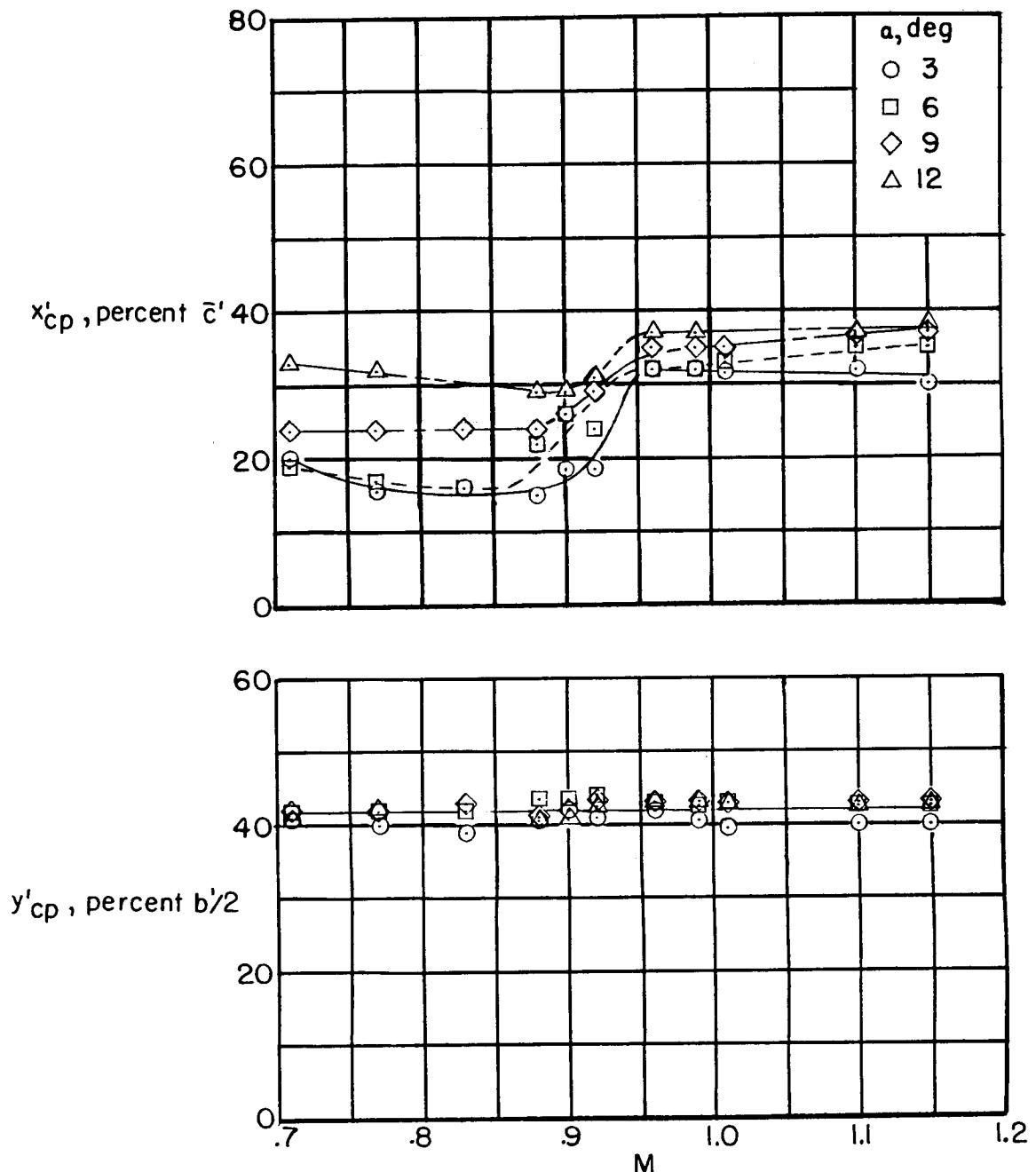
(a) Normal-force coefficient.

Figure 20.- Variation with Mach number of the aerodynamic characteristics of the wing of the X-3 airplane at several angles of attack including a comparison with the airplane characteristics.



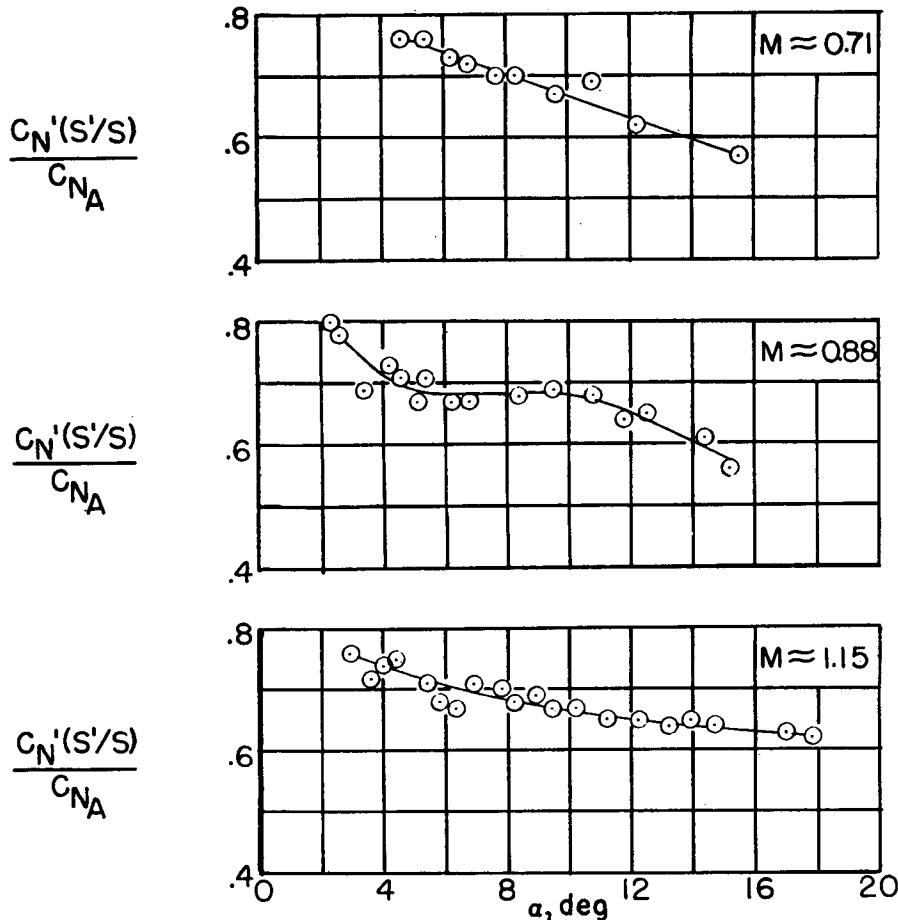
(b) Normal-force-curve slope.

Figure 20.- Continued.

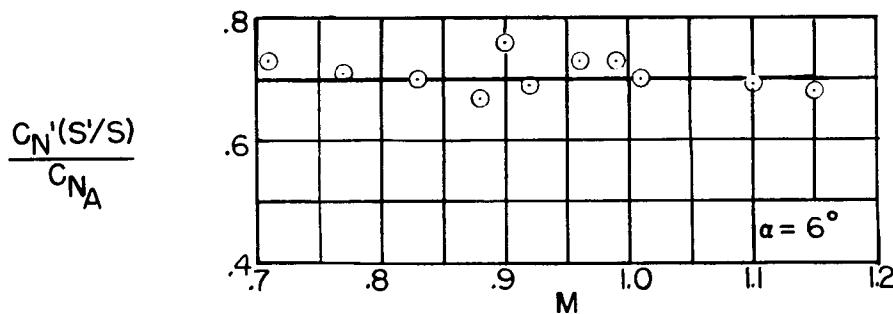


(c) Center of pressure.

Figure 20.- Concluded.



(a) Variation with angle of attack.



(b) Variation with Mach number.

Figure 21.- Variation with angle of attack and Mach number of the contribution of the wing of the X-3 airplane to the total normal force.

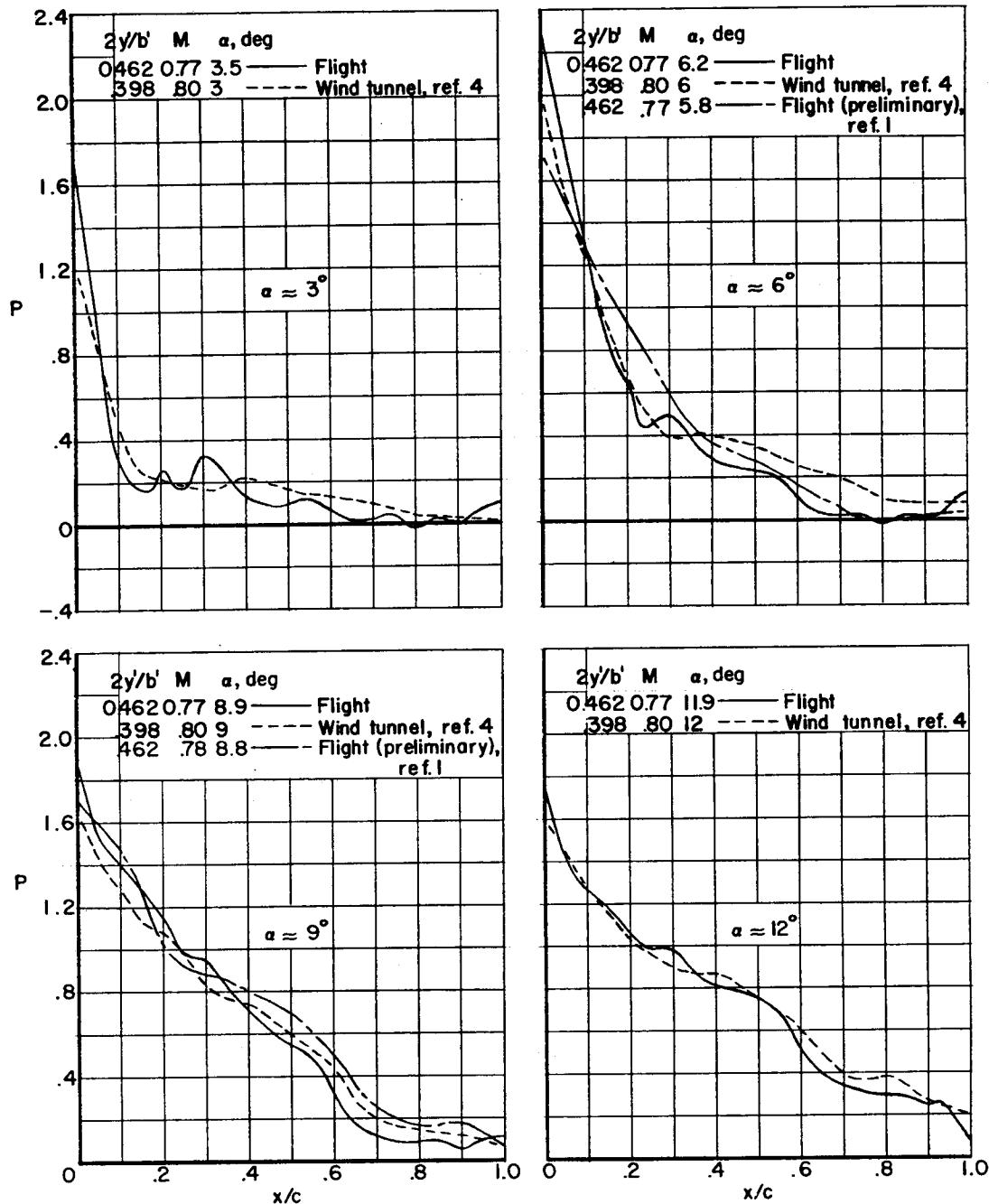
(a) $M \approx 0.77$.

Figure 22.- Comparison of flight data to wind-tunnel results of reference 4 for the X-3 airplane. Chordwise load distributions for station near the midsemispan.

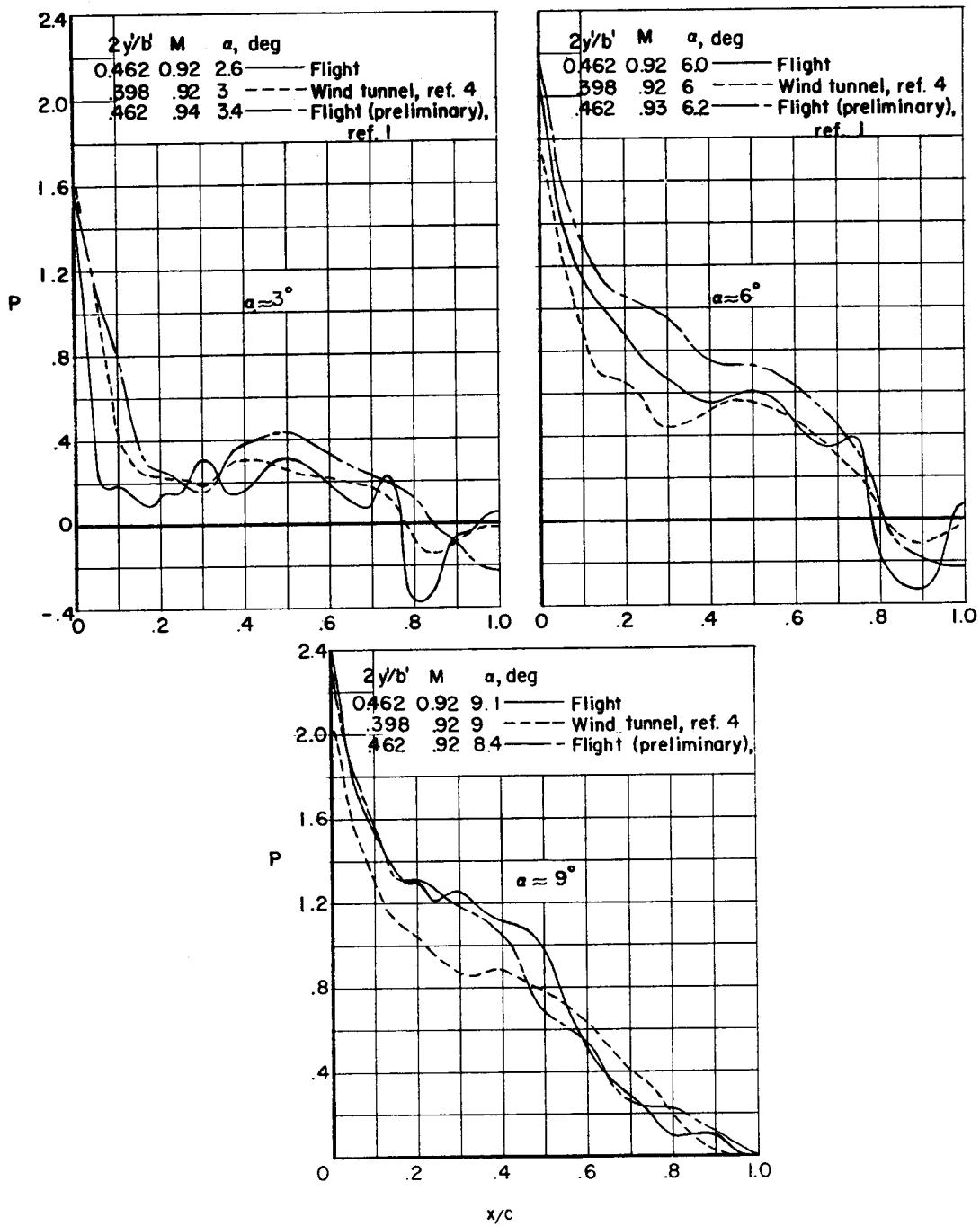
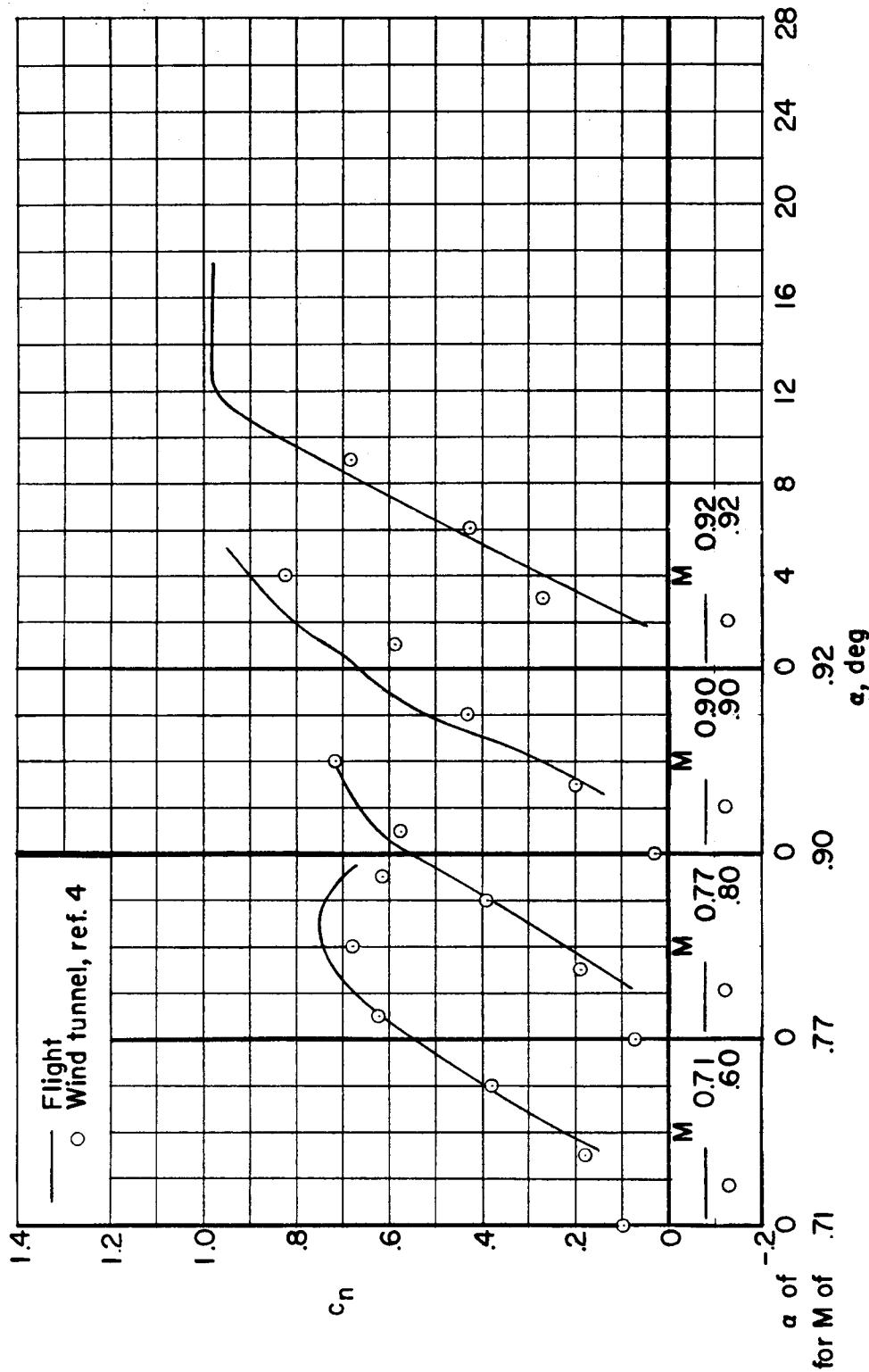
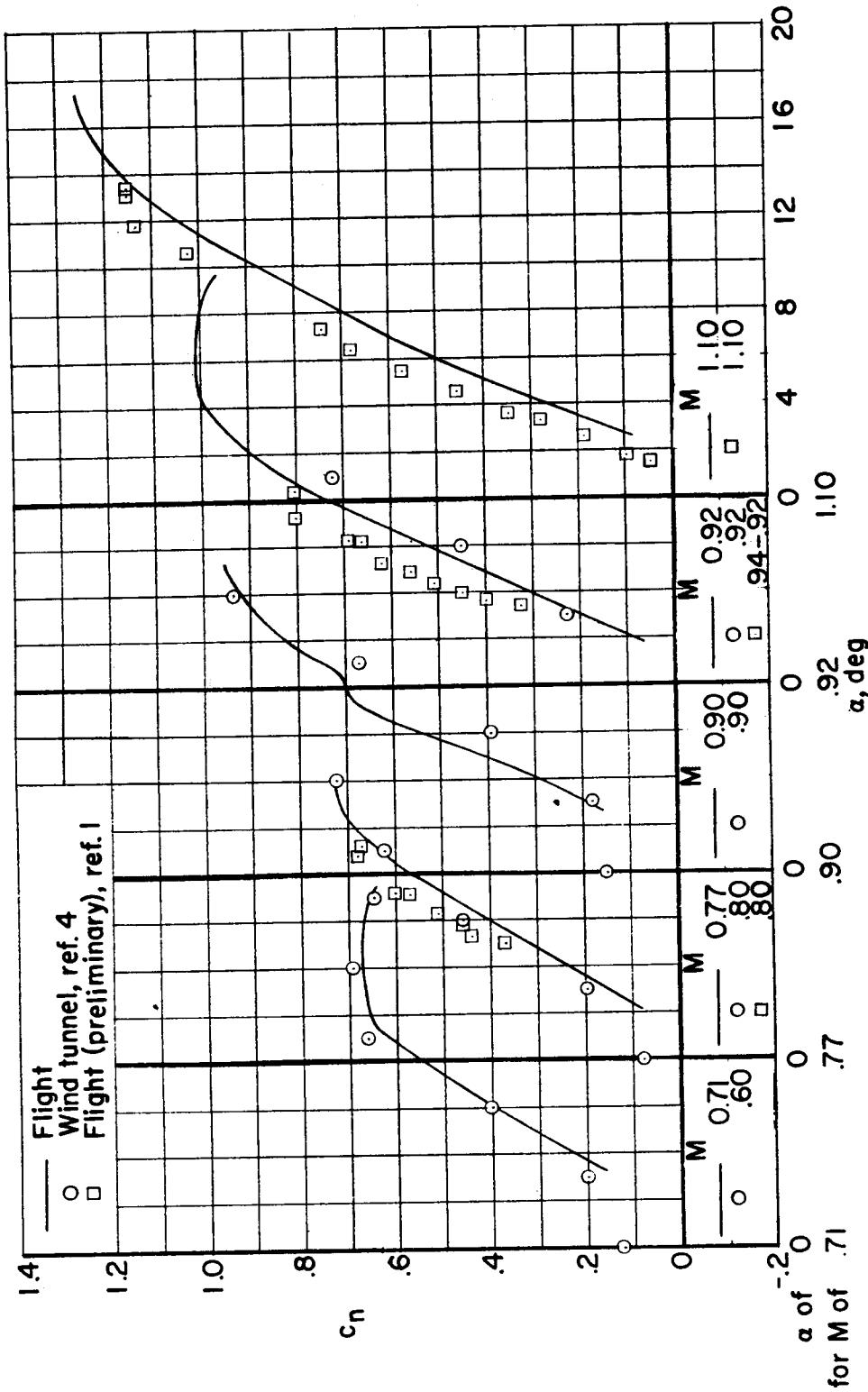
(b) $M \approx 0.92$.

Figure 22.- Concluded.



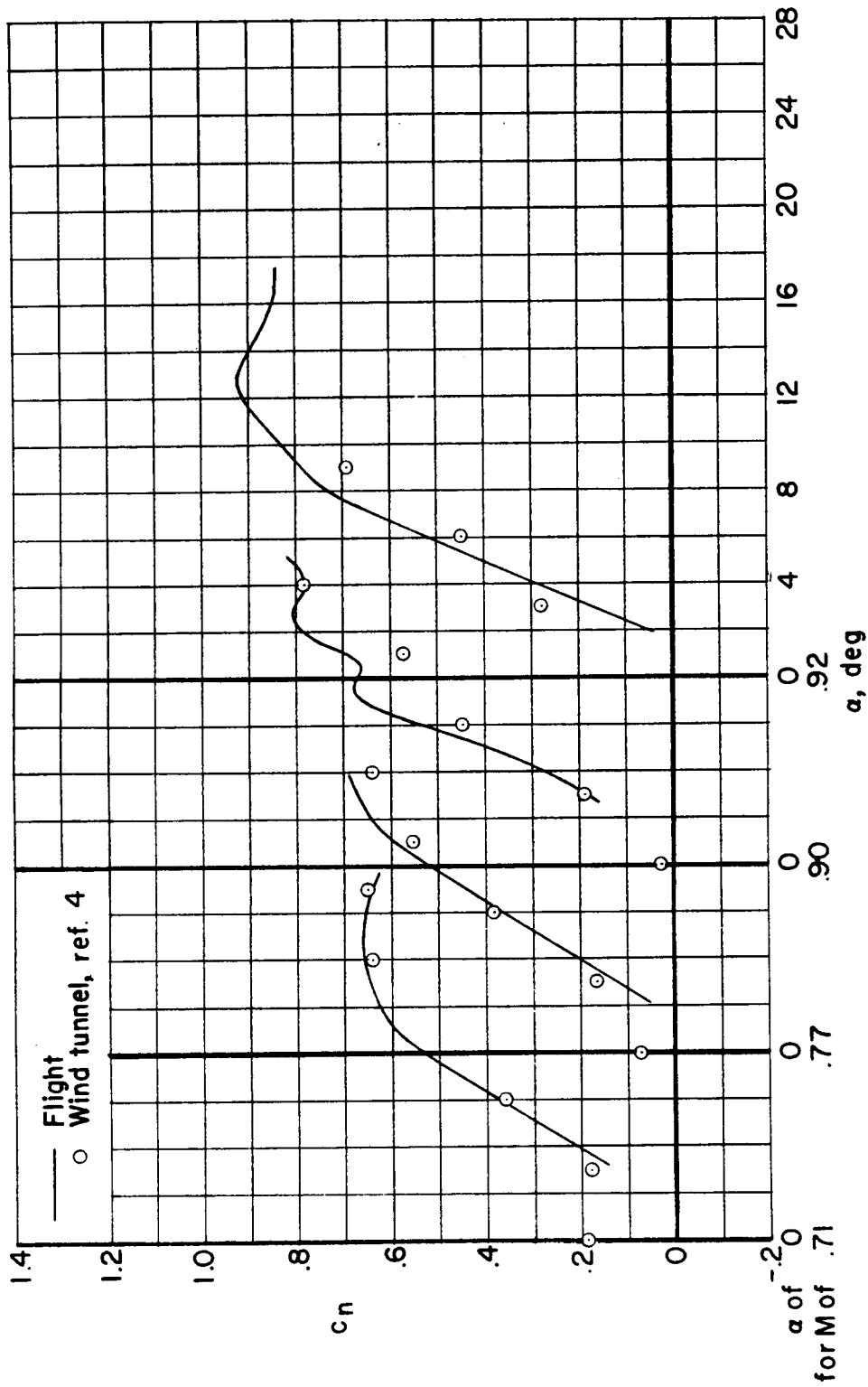
(a) Station 0.231b'/2 (flight); station 0.184b'/2 (wind tunnel, ref. 4).

Figure 23.- Comparison of flight data with wind-tunnel results of reference 4 for the X-3 airplane. Section normal-force coefficient.



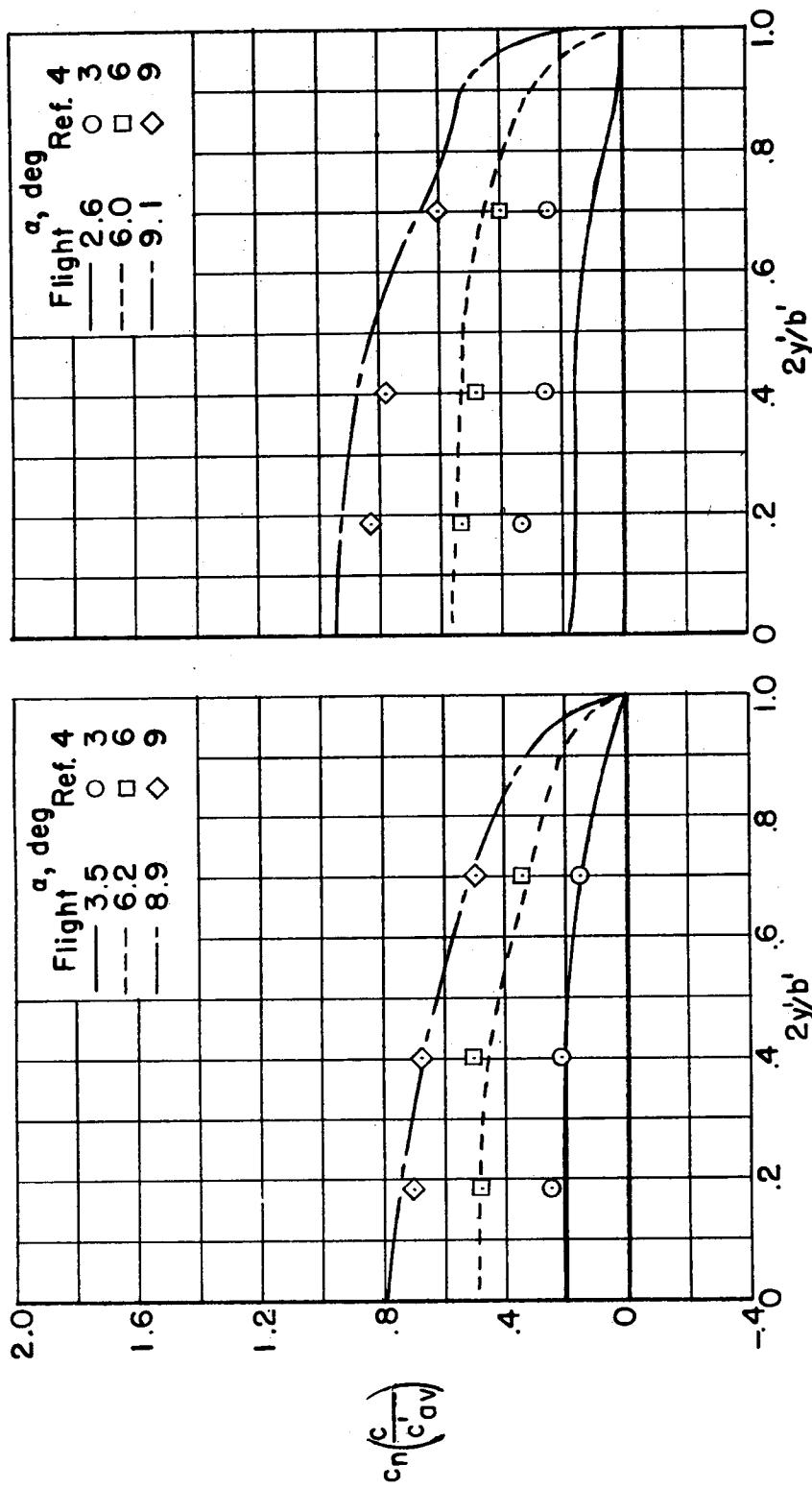
(b) Station 0.462b'/2 (flight); station 0.398b'/2 (wind tunnel, ref. 4).

Figure 23.- Continued.



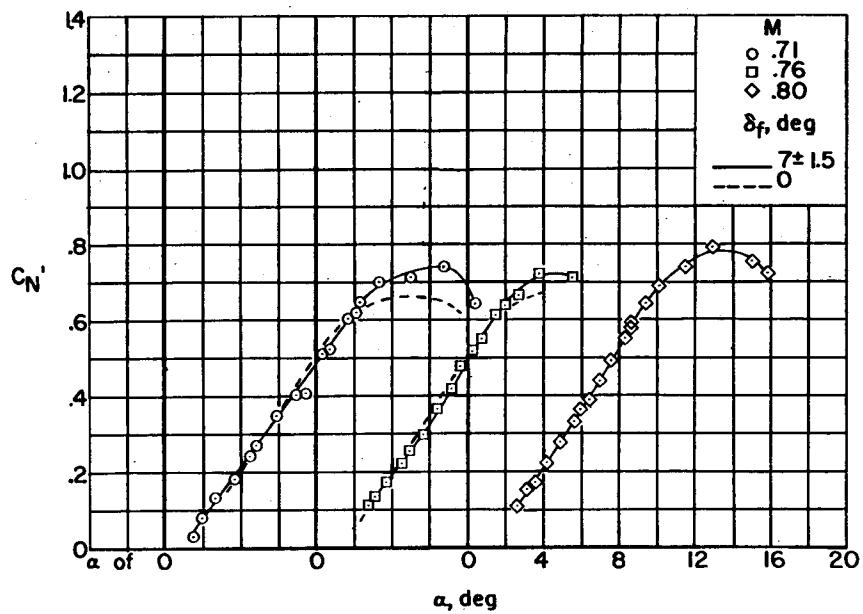
(c) Station 0.673b' / 2 (flight); station 0.699b' / 2 (wind tunnel, ref. 4).

Figure 23.- Concluded.

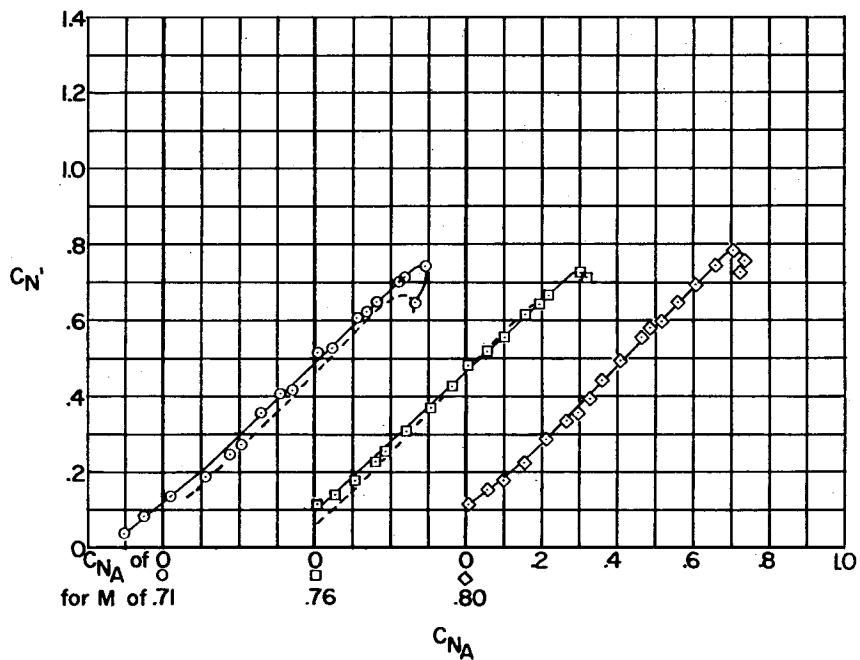


(a) $M \approx 0.77$ (flight); $M = 0.80$ (wind tunnel, ref. 4).
 (b) $M \approx 0.92$ (flight); $M = 0.92$ (wind tunnel, ref. 4).

Figure 24.- Comparison of flight data with wind-tunnel results of reference 4 for the X-3 airplane. Spanwise load distribution.

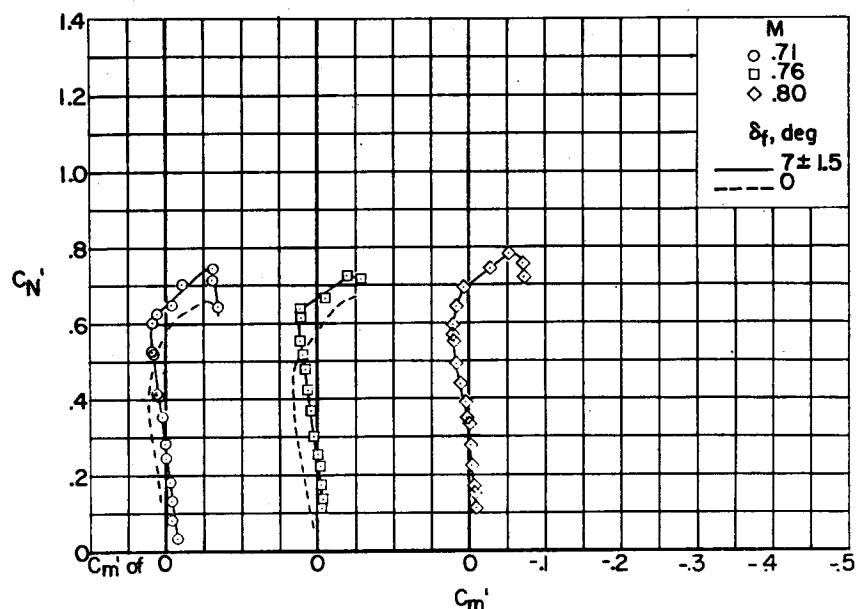


(a) Wing-panel normal-force coefficient.

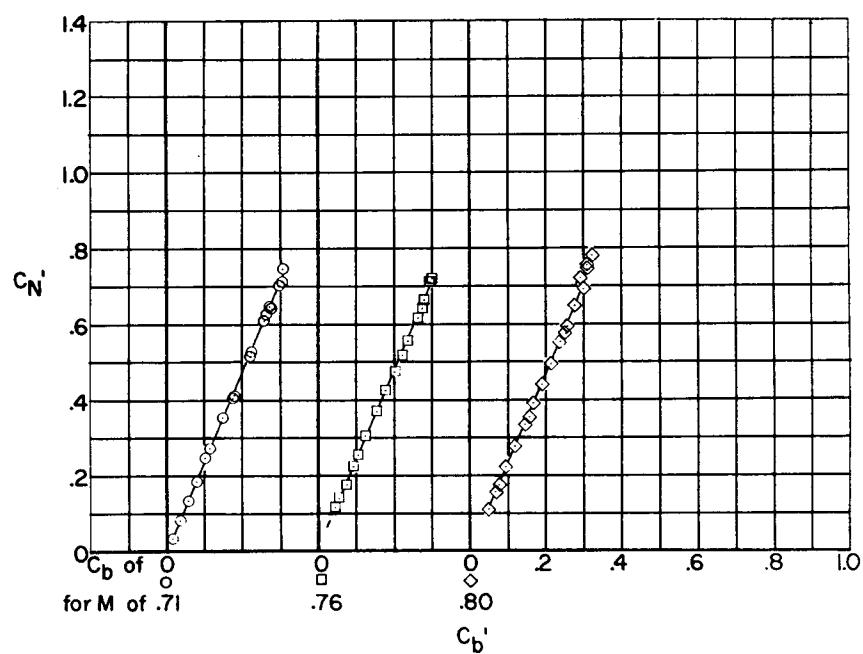


(b) Airplane normal-force coefficient.

Figure 25.- Wing-panel aerodynamic characteristics for the wing of the X-3 airplane. $\delta_f = 7^\circ \pm 1.5^\circ$.

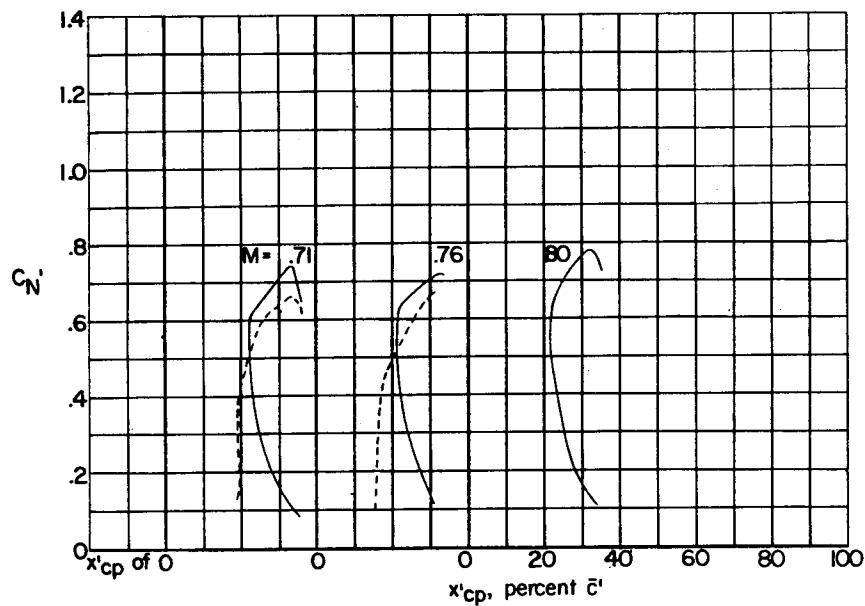


(c) Pitching-moment coefficient.

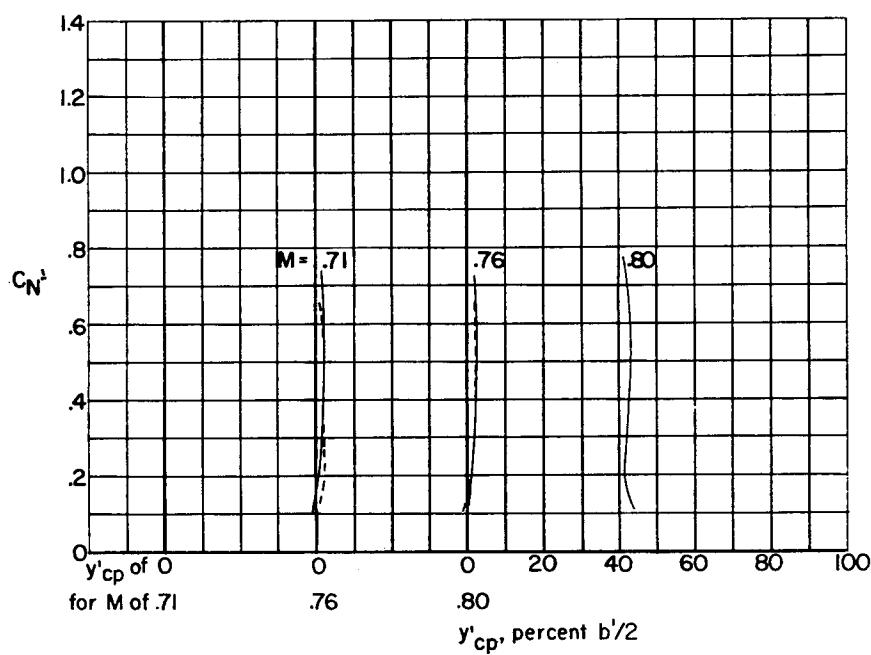


(d) Bending-moment coefficient.

Figure 25.- Continued.



(e) Chordwise location of center of pressure.



(f) Spanwise location of center of pressure.

Figure 25.- Concluded.